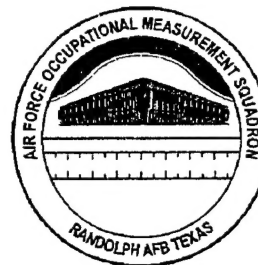




**UNITED STATES
AIR FORCE**



OCCUPATIONAL SURVEY REPORT



METEOROLOGICAL AND NAVIGATION SYSTEMS

AFSC 2E1X2

OSSN: 2376

AUGUST 1999

**OCCUPATIONAL ANALYSIS PROGRAM
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION and TRAINING COMMAND
1550 5th STREET EAST
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PREFACE

This report presents the results of an Air Force Occupational Survey of the Meteorological and Navigation Systems career ladder, Air Force Specialty Code (AFSC) 2E1X2. Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

The survey instrument was developed by 2Lt Tyson Frerking. Computer programming support was provided by Ms. Jeanie Guesman. Ms. Dolores Navarro provided administrative support. Ms. Kimberly Williams analyzed the data and wrote the final report. This report has been reviewed and approved by Lt Col Roger W. Barnes, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to AFOMS/OMYXI, 1550 5th Street East, Randolph Air Force Base, Texas 78150-4449, or by calling DSN 487-5543. For information on the Air Force occupational survey process or other on-going projects, visit our web site at <http://www.omsq.af.mil>.

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SUMMARY OF RESULTS

1. **Survey Coverage:** The Meteorological and Navigation Systems career ladder was surveyed to provide current job and task data for use in updating career ladder documents and training programs. Survey results are based on responses from 339 members accounting for 63 percent of the total population surveyed.
2. **Specialty Jobs:** Two clusters and one job were identified in the career ladder structure analysis. The General METNAV Maintenance Cluster and the Entry-Level METNAV Job are oriented toward technical task performance and account for 77 percent of the population. The METNAV Supervisor Cluster primarily performs management, administrative, and training activities.
3. **Career Ladder Progression:** A typical pattern of progression is noted within the AFSC 2E1X2 career ladder. Personnel at the 3- and 5-skill levels work in the technical jobs of the career ladder and spend most of their time on technical tasks. As incumbents move up to the 7-skill level, they begin to perform supervisory tasks but still spend about half of their time performing the technical tasks of the career ladder.
4. **Training Analysis:** The current AFSC 2E1X2 Course Training Standard (CTS) and Plan of Instruction (POI) are supported by OSR data. Training, functional, and career field personnel are to be commended for producing a CTS and POI that are well supported by the field. However, many tasks not referenced to the CTS and POI should be reviewed to determine modifications that may be necessary to improve the effectiveness or efficiency of training.
5. **Job Satisfaction:** Job satisfaction among AFSC 2E1X2 personnel is higher for first-enlistment and career airmen and slightly lower for second-enlistment members than the comparative sample of like Logistics AFSCs. Reenlistment intentions are lower than the comparative sample for second-enlistment personnel. All Total Active Federal Military Service (TAFMS) groups rate perceived utilization of training higher than the comparative sample.
6. **Implications:** Survey results indicate the present classification structure accurately portrays the jobs performed in this career ladder. The career ladder progression is typical of most AFSCs. Training documents warrant review for the possible addition of elements concerning specific tasks with high percent members performing, training emphasis, and task difficulty. Job satisfaction ratings are higher overall when compared to similar AFSCs while reenlistment intentions are lower for second-enlistment personnel.

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**OCCUPATIONAL SURVEY REPORT (OSR)
METEOROLOGICAL AND NAVIGATION SYSTEMS
(AFSC 2E1X2)**

INTRODUCTION

This is a report of an occupational survey of the Meteorological and Navigation Systems career ladder conducted by the Air Force Occupational Measurement Squadron (AFOMS). The current Meteorological and Navigation Systems career ladder was created in October 1993. Survey data will be used to identify current utilization patterns among career ladder personnel and evaluate career ladder documents and training programs.

Background

As described in the AFMAN 36-2108, *Airman Classification*, dated 30 April 1999, Specialty Description, dated 31 October 1995, Meteorological and Navigation (METNAV) Systems personnel install, remove, relocate, modify, deploy, and maintain fixed and mobile meteorological and navigation systems.

Personnel entering the AFSC 2E1X2 career ladder must attend the E3ABR2E132-001, Meteorological and Navigation Systems Apprentice, course at Keesler AFB MS.

Entry into this career ladder currently requires an Armed Forces Vocational Aptitude Battery (ASVAB) score of Electrical – 67. A strength factor of "H" (Weight lift of 50 lbs) is also required.

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SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) Occupational Survey Study Number (OSSN) 2376, dated February 1999. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, pertinent tasks from the previous survey instrument, and data from the last OSR. The preliminary task list was refined and validated through personal interviews with 23 subject-matter experts (SMEs) at the following training location and operational installations:

<u>BASE</u>	<u>UNIT VISITED</u>	<u>REASON FOR VISIT</u>
Keesler AFB MS	338 TRS	Resident technical training school
McChord AFB WA	62 CS	Army METNAV equipment maintenance
Tinker AFB OK	72 CS	ACC and AFMC missions
Eglin AFB FL	96 CS	AN/FMQ-12 system maintenance
Randolph AFB TX	12 CS	Dual instrument landing system (ILS)

The resulting JI contains a comprehensive listing of 880 tasks grouped under 20 duty headings and a background section requesting such information as grade, base, major command (MAJCOM) assigned, organizational level, job title, functional area, courses completed, test equipment used or operated, weather equipment maintained, and navigation equipment maintained.

Survey Administration

From February through May 1999, base training offices at operational units worldwide administered the inventory to eligible AFSC 2E1X2 personnel. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Personnel Center, Randolph AFB TX. Each individual who completed the inventory first completed an identification and biographical information section and then selected each task performed in his or her current job. After selecting all tasks performed, each member then rated each of these tasks on a 9-point scale, showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount time spent). To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by

the total task ratings and multiplied by 100 to provide a relative percentage of time for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across MAJCOMs and military paygrade groups. All eligible AFSC 2E1X2 personnel were mailed survey disks. Table 1 reflects the percentage distribution, by MAJCOM, of assigned AFSC 2E1X2 personnel as of February 1999. The 339 respondents in the final sample represent 56 percent of the total assigned personnel and 63 percent of the total personnel surveyed. Table 2 reflects the paygrade distribution for these AFSC 2E1X2 personnel.

TABLE 1

COMMAND DISTRIBUTION OF AFSC 2E1X2 PERSONNEL

COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
ACC	23	21
AFMC	16	18
AETC	14	17
USAFE	14	16
AMC	13	12
PACAF	12	9
OTHERS	8	7

TOTAL ASSIGNED* = 601

TOTAL SURVEYED** = 540

TOTAL IN SURVEY SAMPLE = 339

PERCENT OF ASSIGNED IN SAMPLE = 56%

PERCENT OF SURVEYED IN SAMPLE = 63%

* Assigned strength as of February 1999

** Excludes personnel in PCS, student, or hospital status, or less than 6 weeks on the job

TABLE 2
PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

GRADE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
E-2 – E-3	17	18
E-4	24	24
E-5	29	29
E-6	18	16
E-7	11	12
E-8 – E-9	-	-

* Assigned strength as of February 1999

" - " indicates less than 1 percent

Both Command and Paygrade distribution of the survey sample are close to the percent assigned. This indicates the sample is a true representation of the career ladder population.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 2E1X2 personnel (generally E-6 or E-7 craftsmen) also completed a second disk for either training emphasis (TE) or task difficulty (TD). These disks were processed separately from the JIs. This information is used in a number of different analyses discussed in more detail within the report.

Training Emphasis (TE): TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 45 senior noncommissioned officers (NCOs) who completed a TE disk were asked to select tasks they felt require some sort of structured training for entry-level personnel and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident training schools, field training detachments (FTDs), mobile training teams (MTTs), formal on-the-job-training (OJT), or any other organized training method. Interrater agreement for these 45 raters was acceptable. The average TE rating was 2.28, with a standard deviation of 1.71. Any task with a TE rating of 3.99 or above is considered to have high TE.

Task Difficulty (TD): TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 45 senior NCOs who completed TD disks were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was acceptable. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

When used in conjunction with the primary criterion of percent members performing, TE and TD ratings can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting entry-level jobs.

SPECIALTY JOBS

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs performed by the respondents. The Comprehensive Occupational Data Analysis Program (CODAP) assists by creating an individual job description for each respondent based on the tasks performed and relative amount of time spent on these tasks. The CODAP automated job clustering program then compares all the individual job descriptions, locates the two descriptions with the most similar tasks and time spent ratings, and combines them to form a composite job description. In successive stages, CODAP either adds new members to this initial group or forms new groups based on the similarity of tasks and time spent ratings.

The basic group used in the hierarchical clustering process is the Job. When two or more jobs have a substantial degree of similarity, in tasks performed and time spent on tasks, they are grouped together and identified as a Cluster. The structure of the career ladder is then defined in terms of jobs and clusters of jobs.

Overview of Specialty Jobs

Based on the analysis of tasks performed and the amount of time spent performing each task, two clusters and one independent job were identified within the career ladder. Figure 1 illustrates the clusters and job performed by AFSC 2E1X2 personnel.

A listing of these clusters and job is provided below. The stage (STG) number shown beside each title references computer printed information. The letter "N" indicates the number of personnel in each group.

- I. GENERAL METNAV MAINTENANCE CLUSTER (STG021, N=252)
 - A. METNAV NCOIC
 - B. TACAN Maintenance
- II. ENTRY-LEVEL METNAV JOB (STG039, N=8)
- III. METNAV SUPERVISOR CLUSTER (STG022, N=38)
 - A. Quality Assurance
 - B. METNAV Superintendent
 - C. METNAV Training

The respondents forming these clusters and jobs account for 88 percent of the survey sample. The remaining 12 percent, for one reason or another, did not group into one of these clusters or jobs. Examples of job titles for these personnel include Instructor, Curriculum Developer, and Solar Maintenance Technician.

**AFSC 2E1X2 CAREER LADDER SPECIALTY JOBS
(N = 339)**

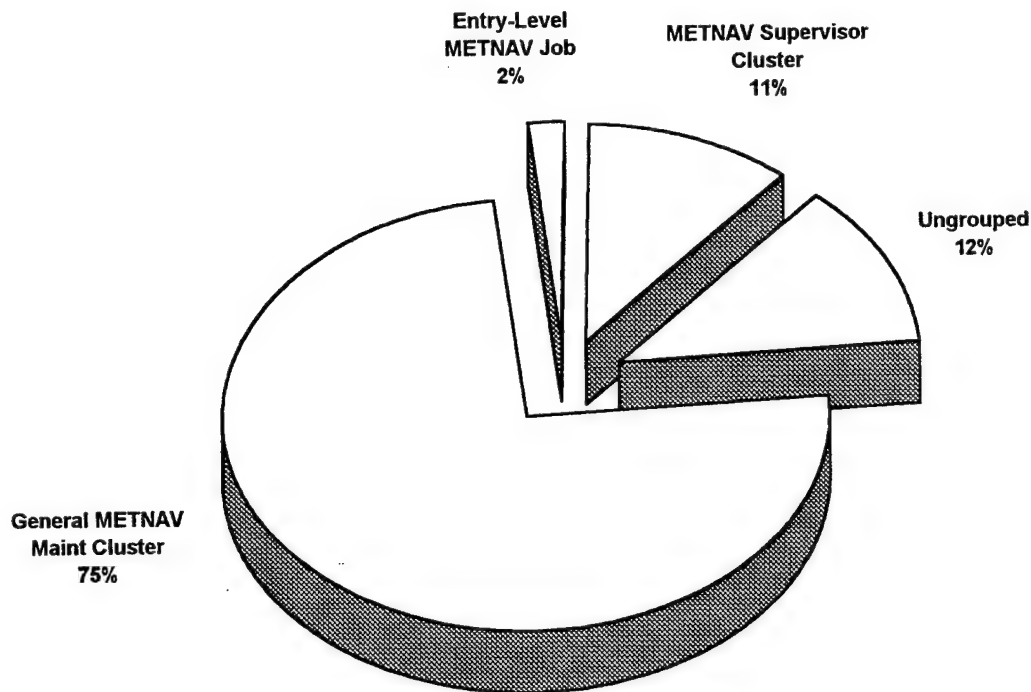


FIGURE 1

Group Descriptions

The following paragraphs contain brief descriptions of the jobs and clusters identified through the career ladder structure analysis. Table 3 presents the relative time spent on duties by members of the specialty job and clusters. Selected background data for the job and clusters are provided in Table 4. Representative tasks for all the groups are contained in Appendix A.

Another way to illustrate the content of jobs is by summarizing tasks performed in common by incumbents across the career ladder. CODAP has a process of identifying groups of related tasks and grouping them together to form task modules (TMs). The basis for identifying these related tasks is called copformance. Copformance assumes that if incumbents perform task A and task B, there is a high likelihood the two tasks share common skills and knowledge and can be trained together. CODAP calculates an index of copformance for each task with every other

task by examining the task performance patterns of all the survey respondents as a whole. Thus, the resulting TMs can be used to summarize and compare jobs. The TMs show the number of tasks included in a module, the percent time spent on tasks in that module, and average percent members performing the particular TM. Representative TMs are listed as part of the job description. The list of tasks within respective modules is presented in Appendix B.

I. GENERAL METNAV MAINTENANCE CLUSTER (STG021). The 252 airmen performing within this cluster comprise 75 percent of the survey sample and represent the core of the career ladder. They spend 33 percent of their time performing the common Meteorological and Navigation Systems tasks of Duty A. The average number of tasks performed by this group is 335, the highest of any other job or cluster, indicating their diversity in performing the core Meteorological and Navigation Systems duties. Distinctive tasks performed include:

- Measure DC voltages
- Measure AC voltages
- Remove or replace bulbs
- Trace circuits or signals using block or circuit diagrams
- Analyze system block diagram functional operations
- Communicate over radio during operational tests
- Measure AN/GRN-29 localizer course transmitter power outputs
- Measure AN/GRN-29 glideslope course transmitter power outputs
- Measure AN/GRN-29 localizer antenna VSWRs
- Align AN/GRN-29 localizer course transmitters
- Measure AN/GRN-29 localizer clearance transmitter power outputs
- Measure AN/GRN-29 glideslope course transmitter percent-of-modulation

The representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0002	AN/GRN-29 ILS Maintenance	49	13.71	82.47
0001	General Maintenance	50	13.67	81.70
0006	Weather Measurement Set Maintenance	40	9.44	77.13

These representative TMs illustrate the concentration on maintaining the more common METNAV systems, such as the ILS and various meteorological instruments, barometers, and systems.

Fifty-two percent of these airmen hold the 5-skill level. These members average 8 years in the career field and over 9 years' Total Active Federal Military Service (TAFMS). The predominant paygrade of this large cluster is E-5.

The main job (STG050) within this cluster is comprised of 209 members. However, there are two distinct jobs within this cluster that are separated by the time spent performing management and supervisory tasks and the METNAV systems maintained.

The **METNAV NCOIC Job** contains nine members and accounts for four percent of the cluster. This job is defined by an average 32 percent time spent performing management and supervisory tasks in Duty Q with only half as much time (an average of seventeen percent) spent performing general maintenance tasks in Duty A compared to the General METNAV Maintenance Cluster. They perform an average of 306 tasks, indicating a diverse job involving management and supervision activities as well as a variety of METNAV maintenance tasks. The predominant paygrade is E-6, averaging just over 9 years in the career field and 16 years' TAFMS. Seventy-eight percent of the members are workcenter supervisors.

The **TACAN Maintenance Job** is comprised of 13 members and accounts for 5 percent of the cluster. These members are defined by the AN/TRN-26/26B TACAN Systems tasks of Duty L as they spend over 28 percent of their time performing tasks in Duty L. They perform an average of 217 tasks reflecting the narrow scope of this job compared to the core of the General METNAV Maintenance Cluster. The predominant paygrade in this job is E-4, and the members are evenly distributed between the 3-, 5-, and 7-skill levels. Sixty-two percent of the job members are assigned to the Combat Communication work area.

A third job (STG046) was found in which approximately 30 percent of the 19 members maintain solar optical and radio observing equipment (Duty F). The distinguishing factor between these members and those in the bulk of the General METNAV Maintenance Cluster is that the solar optical and radio observing maintainers spend less time performing maintenance on the systems maintained by the majority of the members within the cluster, such as the AN/GRN-29 SSILS and the AN/FRN-45/46 TACAN system. An independent job was not identified, however, because the percent time spent maintaining the solar optical and radio observing equipment accounts for only 5 percent of the tasks these members perform.

II. ENTRY-LEVEL METNAV JOB (STG039). The 8 airmen forming this job (2 percent of the survey sample) perform an average of 102 tasks and are distinguished by the 64 percent of their time spent performing the General Maintenance tasks of Duty A. They spend another 28 percent of their time maintaining the meteorological equipment and systems of Duties B, C, and E. Typical general maintenance tasks performed include:

- Perform corrosion control procedures
- Maintain tool kits
- Inspect protective or safety equipment
- Measure AC voltages

- Measure DC voltages
- Remove or replace air filters
- Remove or replace dessicants
- Lace or tie-wrap wiring assemblies

The representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0001	General Maintenance	50	30.57	56.75
0006	Weather Measurement Set Maintenance	40	24.41	57.81
0007	Component Maintenance	39	11.90	34.29

These data indicate that the majority of the entry-level personnel are performing the more basic maintenance tasks and maintaining meteorological equipment rather than navigation systems.

The predominant paygrade of this job is E-3 with an average of 3 years in the career field and over 3 years' TAFMS. Seventy-five percent of the members report holding the 3-skill level with only one member supervising others.

III. METNAV SUPERVISOR CLUSTER (STG022). The 38 airmen forming this cluster (11 percent of the survey sample) are distinguished by the 67 percent of their time spent performing the supervisory tasks of Duty Q and the administrative tasks of Duty S. They average only 61 tasks performed, indicating their limited exposure to the many tasks performed by the core of the career ladder. Representative tasks performed by these incumbents include:

- Maintain administrative files
- Write inspection reports
- Inspect personnel for compliance with military standards
- Compile data for records, reports, logs, or trend analyses
- Interpret policies, directives, or procedures for subordinates
- Develop self-inspection or self-assessment program checklists
- Evaluate effectiveness of training programs, plans, or procedures
- Conduct self-inspections or self-assessments
- Evaluate inspection report findings or inspection procedures
- Conduct staff assistance visits, inspections, or audits

The representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0025	Quality Assurance	16	21.38	66.45
0028	Workcenter Supervision	16	11.61	46.38
0026	Maintenance Supervision	9	8.33	54.68

Members of the METNAV Supervisor Cluster are spending over 40% of their time inspecting and evaluating systems and personnel and performing a large diversity of supervisory activities in support of METNAV maintenance.

The predominant paygrade is E-7 with 47 percent reporting they supervise others. The predominant skill levels are almost evenly split between the 5-skill level and the 7-skill level at 50 percent and 47 percent, respectively. Only 11 percent of these airmen are in their first enlistment. The members of this cluster average 12 years in the career field and almost 14 years' TAFMS.

Three distinct jobs within this cluster are separated by the time spent performing management and supervisory tasks and training tasks.

The **Quality Assurance Job** is defined by the high percent members performing inspections. Tasks include inspecting towers or supports for loose hardware, tension, or level; inspecting electrical grounding systems; inspecting AN/GRN-29 glideslope phasing assemblies; and inspecting AN/FRN-45/46 TACAN antenna towers. These 7 members account for 18 percent of the METNAV Supervisor Cluster and perform an average of 65 tasks. The predominant paygrades are E-4 and E-6 with 43 percent of the members in each grade. The members of this job average just over 10 years in the career field and over 11 years' TAFMS. Eighty-six percent of the members are quality assurance evaluators.

The **METNAV Superintendent Job** accounts for 50 percent of the cluster and is defined by 62 percent of time spent performing management and supervisory tasks of Duty Q. They perform an average of 70 tasks. These include interpreting policies, directives, or procedures for subordinates, determining or establishing logistics requirements, and reviewing budget requirements. Eighty-four percent of these job members hold the 7-skill level, and 63 percent are in the paygrade of E-7. This job accounts for the most senior members in the career ladder with an average of over 15 years in the career field and 18 years' TAFMS.

The **METNAV Training Job** comprises 16 percent of the cluster and is distinguished from the other jobs within this cluster by 25 percent of the members time being spent performing

training tasks in Duty R. These members perform an average of 35 tasks, the lowest number of tasks performed by any identified job or cluster. Tasks representative of this job include conducting on-the-job training (OJT), developing or maintaining training materials or aids, and determining training requirements. Eighty-three percent of these job incumbents hold the 5-skill level with the remaining 17 percent holding the 3-skill level. These members average 8 years in the career field and over 8 years' TAFMS. The predominant paygrade is E-4.

Comparison of Current Group Descriptions to Previous Study

The results of the specialty job analysis were compared to the previous OSR, dated March 1996. As shown in Table 5, the General METNAV Maintenance Cluster identified in the current study was identified in the 1996 survey as the Met/Nav Repairman Job. This core job comprised 63 percent of the sample in the previous study compared to the similar core cluster comprising 75 percent of the current sample. The Entry-Level METNAV Job identified in the current study was not identified in the 1996 study. Comprising 11 percent of the current study, the METNAV Supervisor Cluster was identified as three independent jobs (Workcenter Supervisor, Workcenter Manager, and Functional Manager) in the previous survey. While members in mobility, engineering & installation, and the solar environmental support system were included in the current study, diversity in the tasks they perform precluded them from forming distinct jobs.

Summary

Career ladder structure analysis identified two clusters and one job: General METNAV Maintenance Cluster, Entry-Level METNAV Job, and METNAV Supervisor Cluster. The core of the Meteorological and Navigation System career ladder (General METNAV Maintenance Cluster) involves the performance of technical tasks associated with the maintenance of METNAV systems and equipment. The Entry-Level METNAV Job consists of members performing fewer tasks than the core cluster but still technical in nature. The METNAV Supervisor Cluster contains the more senior members of the career ladder who spend most of their time performing management, supervisory, and training tasks.

TABLE 3

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS AND CLUSTERS

DUTIES	General METNAV Maint Cluster (STG021) (N=252)				METNAV NCOIC Job (STG063) (N=9)		TACAN Maint Job (STG047) (N=13)	
	A	B	C	D	E	F	G	H
PERFORMING GENERAL MAINTENANCE ACTIVITIES	33	17	38					
MAINTAINING NONELECTRIC METEOROLOGICAL INSTRUMENTS AND SOLID-STATE BAROMETERS	3	2	1					
MAINTAINING WIND, TEMPERATURE, VISIBILITY, THUNDERSTORM SENSING, AND CLOUD SETS	8	3	2					
MAINTAINING NEXT GENERATION RADAR (NEXRAD) PRINCIPLE USER PROCESSORS (PUPs)	1	-	-					
MAINTAINING WIND, TEMPERATURE, AND CLOUD TACTICAL WEATHER EQUIPMENT	1	0	-					
MAINTAINING SOLAR OPTICAL AND RADIO OBSERVING EQUIPMENT	-	0	0					
INSTALLING OR REMOVING METEOROLOGICAL AND NAVIGATION SYSTEMS	3	1	4					
MAINTAINING LOW FREQUENCY BEACON (LFB) SYSTEMS	-	-	0					
MAINTAINING AN/GRN-29 SOLID-STATE INSTRUMENT LANDING SYSTEMS (SSILSs)	16	11	0					
MAINTAINING MARKER BEACONS	-	-	0					
MAINTAINING VHF OMNIRANGE (VOR) SYSTEMS	6	2	-					
MAINTAINING AN/TRN-26/26B TACAN SYSTEMS AND OE-258/URN MODULATION GENERATORS	2	-	28					
MAINTAINING AN/TRN-41 TACAN SYSTEMS	1	-	4					
MAINTAINING AN/FRN-45/46 TACAN SYSTEMS	8	6	0					
PERFORMING FLIGHT INSPECTIONS	1	2	-					
PERFORMING MOBILITY REQUIREMENTS	-	-	6					
PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	8	32	7					
PERFORMING TRAINING ACTIVITIES	2	8	2					
PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	3	9	3					
PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	3	6	4					

" - " indicates less than 1 percent

TABLE 3 (CONTINUED)

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS AND CLUSTERS

DUTIES	Entry-Lvl METNAV Job (STG039) (N=8)			METNAV Supervisor Cluster (STG022) (N=38)			Quality Assurance Job (STG057) (N=7)		
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	64		6		20			
B	MAINTAINING NONELECTRIC METEOROLOGICAL INSTRUMENTS AND SOLID-STATE BAROMETERS	8		1		4			
C	MAINTAINING WIND, TEMPERATURE, VISIBILITY, THUNDERSTORM SENSING, AND CLOUD SETS	18		-		0			
D	MAINTAINING NEXT GENERATION RADAR (NEXRAD) PRINCIPLE USER PROCESSORS (PUPs)	-		-		1			
E	MAINTAINING WIND, TEMPERATURE, AND CLOUD TACTICAL WEATHER EQUIPMENT	2		-		0			
F	MAINTAINING SOLAR OPTICAL AND RADIO OBSERVING EQUIPMENT	0		-		0			
G	INSTALLING OR REMOVING METEOROLOGICAL AND NAVIGATION SYSTEMS	1		1		1			
H	MAINTAINING LOW FREQUENCY BEACON (LFB) SYSTEMS	0		-		1			
I	MAINTAINING AN/GRN-29 SOLID-STATE INSTRUMENT LANDING SYSTEMS (SSILSs)	2		3		11			
J	MAINTAINING MARKER BEACONS	0		-		1			
K	MAINTAINING VHF OMNIRANGE (VOR) SYSTEMS	-		1		7			
L	MAINTAINING AN/TRN-26/26B TACAN SYSTEMS AND OE-258/URN MODULATION GENERATORS	0		-		-			
M	MAINTAINING AN/TRN-41 TACAN SYSTEMS	-		0		0			
N	MAINTAINING AN/FRN-45/46 TACAN SYSTEMS	-		-		1			
O	PERFORMING FLIGHT INSPECTIONS	0		-		-			
P	PERFORMING MOBILITY REQUIREMENTS	0		0		0			
Q	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	1		49		28			
R	PERFORMING TRAINING ACTIVITIES	-		13		7			
S	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	2		18		14			
T	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	1		6		3			

" - " indicates less than 1 percent

TABLE 3 (CONTINUED)

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS AND CLUSTERS

DUTIES	METNAV	
	Supt Job (STG065) (N=19)	Training Job (STG041) (N=6)
A PERFORMING GENERAL MAINTENANCE ACTIVITIES	2	0
B MAINTAINING NONELECTRIC METEOROLOGICAL INSTRUMENTS AND SOLID-STATE BAROMETERS	-	0
C MAINTAINING WIND, TEMPERATURE, VISIBILITY, THUNDERSTORM SENSING, AND CLOUD SETS	0	0
D MAINTAINING NEXT GENERATION RADAR (NEXRAD) PRINCIPLE USER PROCESSORS (PUPs)	0	0
E MAINTAINING WIND, TEMPERATURE, AND CLOUD TACTICAL WEATHER EQUIPMENT	0	0
F MAINTAINING SOLAR OPTICAL AND RADIO OBSERVING EQUIPMENT	1	0
G INSTALLING OR REMOVING METEOROLOGICAL AND NAVIGATION SYSTEMS	1	-
H MAINTAINING LOW FREQUENCY BEACON (LFB) SYSTEMS	-	0
I MAINTAINING AN/GRN-29 SOLID-STATE INSTRUMENT LANDING SYSTEMS (SSILSs)	1	0
J MAINTAINING MARKER BEACONS	0	0
K MAINTAINING VHF OMNIRANGE (VOR) SYSTEMS	0	0
L MAINTAINING AN/TRN-26/26B TACAN SYSTEMS AND OE-258/URN MODULATION GENERATORS	0	0
M MAINTAINING AN/TRN-41 TACAN SYSTEMS	0	0
N MAINTAINING AN/FRN-45/46 TACAN SYSTEMS	-	0
O PERFORMING FLIGHT INSPECTIONS	0	0
P PERFORMING MOBILITY REQUIREMENTS	0	0
Q PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	62	37
R PERFORMING TRAINING ACTIVITIES	14	25
S PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	16	24
T PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	3	13

" - " indicates less than 1 percent

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS AND CLUSTERS

	General METNAV Maint Cluster (STG021)	METNAV NCOIC Job (STG063)	TACAN Maint Job (STG047)
NUMBER IN GROUP	252	9	13
PERCENT OF SAMPLE	75%	3%	4%
PERCENT IN CONUS	71%	44%	69%
SKILL-LEVEL DISTRIBUTION:			
2E132	24%	0%	38%
2E152	52%	0%	31%
2E172	24%	100%	31%
ADDITIONAL INFORMATION			
PREDOMINANT GRADE(S)	E-5	E-6	E-4
AVERAGE MONTHS IN CAREER FIELD	95	110	92
AVERAGE TAFMS	113	193	110
PERCENT WITH 1-48 MOS IN CAREER FIELD	35%	0%	61%
PERCENT SUPERVISING	47%	100%	31%
AVERAGE NUMBER OF TASKS PERFORMED	335	306	217

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS AND CLUSTERS

	Entry-Lvl METNAV Job (STG039)	METNAV Supervisor Cluster (STG022)	Quality Assurance Job (STG057)
NUMBER IN GROUP	8	38	7
PERCENT OF SAMPLE	2%	11%	2%
PERCENT IN CONUS	25%	76%	86%
SKILL-LEVEL DISTRIBUTION:			
2E132	75%	3%	0%
2E152	25%	50%	71%
2E172	0%	47%	29%
ADDITIONAL INFORMATION			
PREDOMINANT GRADE(S)	E-3	E-7	E-4, E-6
AVERAGE MONTHS IN CAREER FIELD	37	145	121
AVERAGE TAFMS	42	165	140
PERCENT WITH 1-48 MOS IN CAREER FIELD	76%	11%	29%
PERCENT SUPERVISING	13%	47%	14%
AVERAGE NUMBER OF TASKS PERFORMED	102	61	65

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS AND CLUSTERS

	METNAV Supt Job (STG065)	METNAV Training Job (STG041)
NUMBER IN GROUP	19	6
PERCENT OF SAMPLE	6%	2%
PERCENT IN CONUS	79%	83%

SKILL-LEVEL DISTRIBUTION:	
2E132	0% 17%
2E152	16% 83%
2E172	84% 0%

ADDITIONAL INFORMATION	
PREDOMINANT GRADE(S)	E-7 E-4
AVERAGE MONTHS IN CAREER FIELD	188 97
AVERAGE TAFMS	218 101
PERCENT WITH 1-48 MOS IN CAREER FIELD	5% 17%
PERCENT SUPERVISING	74% 33%
AVERAGE NUMBER OF TASKS PERFORMED	70 35

TABLE 5

SPECIALTY JOB AND CLUSTER COMPARISONS BETWEEN CURRENT SURVEY AND 1996 SURVEY

<u>CURRENT SURVEY (N=339)</u>	<u>PERCENT OF SAMPLE</u>	<u>1996 SURVEY (N=552)</u>	<u>PERCENT OF SAMPLE</u>
GENERAL METNAV MAINTENANCE CLUSTER	75	MET/NAV REPAIRMAN JOB	63
ENTRY-LEVEL METNAV JOB	2	-	-
METNAV SUPERVISOR CLUSTER	11	WORKCENTER SUPERVISOR JOB	3
		WORKCENTER MANAGER JOB	2
		FUNCTIONAL MANAGER JOB	1
-		MOBILITY JOB	6
-		ENGINEERING & INSTALLATION JOB	
-		SOLAR ENVIRONMENTAL SUPPORT SYSTEM JOB	1

" - " indicates no match in report

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as the AFMAN 36-2108 *Airman Classification*, Specialty Description and the Career Field Education and Training Plan (CFETP), reflect what career ladder personnel are actually doing in the field.

The distribution of skill-level groups across the career ladder jobs and clusters is displayed in Table 6, while Table 7 offers another perspective by displaying the relative percent time spent on each duty across skill-level groups. A typical pattern of progression is noted within the AFSC 2E1X2 career ladder. Personnel at the 3- and 5-skill levels work in the technical jobs of the career ladder and spend most of their time on technical tasks. As incumbents move up to the 7-skill level, they perform many more supervisory tasks but still spend half of their time performing the technical tasks of the career ladder.

Skill-Level Descriptions

DAFSC 2E132. Representing 22 percent of the survey sample, these 73 airmen perform an average of 265 tasks. Eighty-two percent of this group work in the General METNAV Maintenance Cluster (see Table 6) with 8 percent performing in the Entry-Level METNAV Job.

Table 7 reflects the percent time spent on duties by DAFSC 2E132 personnel. At the 3-skill level, 40 percent of their time is spent performing the general maintenance tasks of Duty A. Members holding DAFSC 2E132 spend 93 percent of their time performing technical tasks in Duties A through N. Representative tasks performed by these members are listed in Table 8.

DAFSC 2E152. The 178 members of this group account for 53 percent of the survey sample. Seventy-four percent work in the General METNAV Maintenance Cluster (see Table 6).

Table 7 provides a comparison of the relative time spent on duties at the 5-skill level and shows an increase at the 5-skill level in the number of personnel performing the supervisory tasks of Duty Q. This table reflects a pattern similar to the 3-skill level with 30 percent of their time being spent performing general maintenance tasks (Duty A) and 40 percent of their time being spent maintaining specific METNAV equipment and systems.

Table 9 lists representative tasks performed by these DAFSC 2E152 personnel. Table 10 reflects those tasks which best differentiate the 3-skill levels from the 5-skill levels. This table shows that the 3-skill levels perform six technical tasks much more frequently than the 5-skill levels, while the 5-skill levels perform supervisory tasks rarely performed at the 3-skill level.

DAFSC 2E172. These 88 members perform an average of 277 tasks and represent 26 percent of the survey sample. Table 6 shows the highest percentage of members is in the General METNAV Maintenance Cluster, while 20 percent perform in the METNAV Supervisor Cluster.

Table 7 reflects the percent time spent on duties by DAFSC 2E172 members and shows decreases in the amount of time spent by members performing the technical tasks of Duties A through N. The 7-skill level members spend 30 percent of their time performing management and supervisory tasks. Fifty percent of their time is spent on nontechnical tasks involving management and supervision, training, administration, and supply. This is an increase of time spent performing nontechnical tasks of over 20 percent compared to the 5-skill level members.

Representative tasks performed by 7-skill level members are reflected in Table 11. Table 12 reflects tasks which best differentiate between 5- and 7-skill levels. This table clearly shows a much higher devotion to management and supervision at the 7-skill level than the 5-skill level.

Summary

Progression in the Meteorological and Navigation Systems career ladder follows a regular pattern of highly technical job focus at the lower skill levels with a broadening into supervision and management at the 7-skill level. Three- and 5-skill level airmen perform many tasks in common, and both groups spend the vast majority of their time performing technical AFSC-specific METNAV tasks. The 5-skill level members, while performing similar technical tasks, perform some supervisory and management tasks. At the 7-skill level, members still perform a substantial amount of technical tasks but demonstrate a strong shift toward supervisory functions.

TABLE 6

DISTRIBUTION OF DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS AND CLUSTERS
(PERCENT RESPONDING)

<u>SPECIALTY JOBS</u>	2E132 (N=73)	2E152 (N=178)	2E172 (N=88)
I. GENERAL METNAV MAINTENANCE CLUSTER	82	74	68
II. ENTRY-LEVEL METNAV JOB	8	1	0
III. METNAV SUPERVISOR CLUSTER	1	11	20
NOT GROUPED	9	14	12

TABLE 7

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

DUTIES	2E132	2E152	2E172
	(N=73)	(N=178)	(N=88)
A PERFORMING GENERAL MAINTENANCE ACTIVITIES	40	30	22
B MAINTAINING NONELECTRIC METEOROLOGICAL INSTRUMENTS AND SOLID-STATE BAROMETERS	3	3	2
C MAINTAINING WIND, TEMPERATURE, VISIBILITY, THUNDERSTORM SENSING, AND CLOUD SETS	10	7	4
D MAINTAINING NEXT GENERATION RADAR (NEXRAD) PRINCIPLE USER PROCESSORS (PUPs)	1	1	-
E MAINTAINING WIND, TEMPERATURE, AND CLOUD TACTICAL WEATHER EQUIPMENT	1	1	-
F MAINTAINING SOLAR OPTICAL AND RADIO OBSERVING EQUIPMENT	1	1	1
G INSTALLING OR REMOVING METEOROLOGICAL AND NAVIGATION SYSTEMS	3	2	2
H MAINTAINING LOW FREQUENCY BEACON (LFB) SYSTEMS	1	-	1
I MAINTAINING AN/GRN-29 SOLID-STATE INSTRUMENT LANDING SYSTEMS (SSILSs)	14	15	9
J MAINTAINING MARKER BEACONS	-	-	-
K MAINTAINING VHF OMNIRANGE (VOR) SYSTEMS	5	5	3
L MAINTAINING AN/TRN-26/26B TACAN SYSTEMS AND OE-258/URN MODULATION GENERATORS	3	1	1
M MAINTAINING AN/TRN-41 TACAN SYSTEMS	-	-	-
N MAINTAINING AN/FRN-45/46 TACAN SYSTEMS	7	6	5
O PERFORMING FLIGHT INSPECTIONS	1	-	1
P PERFORMING MOBILITY REQUIREMENTS	1	-	-
Q PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2	11	30
R PERFORMING TRAINING ACTIVITIES	1	6	8
S PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	2	6	7
T PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	3	4	3

" - " indicates less than 1 percent

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY DAFSC 2E132 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=73)
A0104	Measure DC voltages	93
A0144	Remove or replace bulbs	93
A0112	Perform corrosion control procedures	90
A0101	Measure AC voltages	89
A0099	Maintain tool kits	86
C0262	Perform turn on-off procedures for FMQ-8 and check for normal indications	84
C0264	Perform turn on-off procedures for FMQ-13 and check for normal indications	84
A0029	Analyze system block diagram functional operations	82
C0254	Perform operational checks of FMQ-8 temperature-dew point measuring sets	82
C0237	Complete FMQ-8 performance tests	82
C0238	Complete FMQ-13 performance tests	82
A0206	Trace circuits or signals using block or circuit diagrams	82
A0148	Remove or replace dessicants	82
A0043	Communicate over radio during operational tests	81
C0271	Remove or replace components in FMQ-8 systems	81
C0230	Align FMQ-8 dewpoint and ambient air temperature mechanisms	81
C0259	Perform operational tests of CT-12K with maintenance terminal	79
A0030	Analyze system circuit operations	79
C0245	Isolate malfunctions in FMQ-8 systems	79
A0098	Lace or tie-wrap wiring assemblies	79
C0239	Complete GMQ-34 performance tests	79
A0056	Inspect electrical wiring	78
C0266	Perform turn on-off procedures for IP-1456 and check for normal indications	78
A0125	Perform operational checks of power supplies	78
C0260	Perform turn on-off procedures for CT-12K and check for normal indications	78

* Average Number of Tasks Performed - 265

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY DAFSC 2E152 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=178)
A0104	Measure DC voltages	80
A0029	Analyze system block diagram functional operations	76
A0206	Trace circuits or signals using block or circuit diagrams	74
A0112	Perform corrosion control procedures	74
A0064	Inspect protective or safety equipment	71
A0051	Evaluate equipment parameters, such as meter readings	70
T0872	Maintain PMI listings	65
R0825	Conduct on-the-job training (OJT)	59
T0868	Maintain core automated maintenance system (CAMS) workcenter listings	59
R0837	Maintain training records or files	56
S0850	Maintain TO libraries	56
Q0795	Evaluate performance of meteorological and navigation systems	56
S0849	Maintain time compliance technical orders (TCTOs)	55
R0834	Evaluate progress of trainees	51
S0847	Maintain administrative files	47
R0827	Determine training requirements	46
S0848	Maintain publications libraries or files, other than TO libraries or files	44
Q0794	Evaluate mission impact resulting from inoperative meteorological and navigation systems equipment	43
S0851	Maintain or update status indicators, such as boards, graphs, or charts	41
S0841	Compile data for records, reports, logs, or trend analyses	36
R0830	Develop training programs, plans, or procedures	35
Q0814	Write inspection reports	31
R0829	Develop or procure training materials or aids	31
R0839	Prepare job qualification standards (JQSs)	23
R0831	Develop written tests	15

* Average Number of Tasks Performed - 257

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 2E132 AND DAFSC 2E152 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 2E132 (N=73)	DAFSC 2E152 (N=178)	DIFFERENCE
A0109 Pack or unpack tactical equipment	68	40	28
A0121 Perform operational checks of noise sources	41	18	23
C0230 Align FMQ-8 dewpoint and ambient air temperature mechanisms	81	58	22
C0262 Perform turn on-off procedures for FMQ-8 and check for normal indications	84	63	21
C0238 Complete FMQ-13 performance tests	82	62	20
A0126 Perform operational checks of random access memories (RAMs)	44	24	20
Q0819 Write replies to inspection reports	5	47	-42
R0834 Evaluate progress of trainees	8	51	-42
Q0802 Inspect personnel for compliance with military standards	5	46	-41
R0826 Counsel trainees on training progress	7	48	-41
Q0769 Conduct supervisory orientations for newly assigned personnel	3	44	-41
Q0803 Interpret policies, directives, or procedures for subordinates	5	46	-41

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY DAFSC 2E172 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=88)
Q0810 Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals	84
Q0802 Inspect personnel for compliance with military standards	84
Q0803 Interpret policies, directives, or procedures for subordinates	83
Q0809 Review budget requirements	83
Q0796 Evaluate personnel for compliance with performance standards	82
Q0771 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	81
Q0819 Write replies to inspection reports	81
Q0818 Write recommendations for awards or decorations	81
Q0793 Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	80
S0847 Maintain administrative files	80
Q0766 Conduct self-inspections or self-assessments	78
Q0778 Develop or establish work methods or procedures	78
Q0817 Write or indorse military performance reports	77
R0834 Evaluate progress of trainees	77
Q0799 Implement safety or security programs	77
R0833 Evaluate effectiveness of training programs, plans, or procedures	76
Q0791 Evaluate inspection report findings or inspection procedures	76
R0827 Determine training requirements	76
Q0813 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	76
Q0792 Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) program	76
Q0776 Develop self-inspection or self-assessment program checklists	75
Q0795 Evaluate performance of meteorological and navigation systems	75
Q0772 Determine or establish work assignments or priorities	75
Q0797 Evaluate personnel for promotion, demotion, reclassification, or special awards	75
Q0780 Draft budget requirements	75

* Average Number of Tasks Performed - 277

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 2E152 AND DAFSC 2E172 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 2E152 (N=178)	DAFSC 2E172 (N=88)	DIFFERENCE
A0099 Maintain tool kits	70	42	28
A0136 Prepare test equipment for test measurement diagnostic equipment (TMDE) processing	69	47	23
K0562 Adjust transmitter power outputs	52	31	21
A0112 Perform corrosion control procedures	74	53	21
Q0809 Review budget requirements	21	83	-62
Q0820 Write staff studies, surveys, or routine reports, other than training or inspection reports	11	66	-55
Q0780 Draft budget requirements	20	75	-55
Q0813 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	24	76	-53
Q0810 Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals	35	84	-49

TRAINING ANALYSIS

Occupational survey data are one of many sources of information that can be used to assist in the development of a training program relevant to the needs of personnel in their first enlistment. Factors which may be used in evaluating training include the overall description of the work being performed by first-job or first-enlistment personnel and their overall distribution across career ladder jobs, percentages of first-job (1-24 months' TAFMS) or first-enlistment (1-48 months' TAFMS) members performing specific tasks, as well as TE and TD ratings (previously explained in the **SURVEY METHODOLOGY** section).

First-Enlistment Personnel

This study has only 31 members in their first-job assignment (1-24 months' TAFMS), representing 9 percent of the survey sample. Table 13 displays the relative time spent on duties by first-job personnel. As seen in this table, first-job personnel spend 45 percent of their time performing the General Maintenance tasks of Duty A with smaller percentages of time spread across the specific METNAV equipment and systems duty areas of the job inventory. Table 14 lists representative tasks performed by these first-job personnel and reflects the technical job of these newly assigned personnel.

There are 101 members in their first-enlistment representing 30 percent of the total survey sample. Figure 2 reflects the distribution of first-enlistment personnel within the career ladder. Table 15 displays the relative percent of time spent on duties by first-enlistment personnel. First-enlistment personnel spend 39 percent of their time performing the General Maintenance tasks of Duty A and are primarily employed in the General METNAV Maintenance Cluster. Representative tasks performed by first-enlistment personnel are displayed in Table 16.

Table 17 reflects the Test Equipment used by first-enlistment respondents while Table 18 lists the Weather Equipment maintained by first-enlistment airmen. Navigation equipment maintained by members with 1-48 months' TAFMS is listed in Table 19.

**DISTRIBUTION OF 2E1X2 FIRST-ENLISTMENT PERSONNEL
ACROSS SPECIALTY JOBS AND CLUSTERS
(N = 101)**

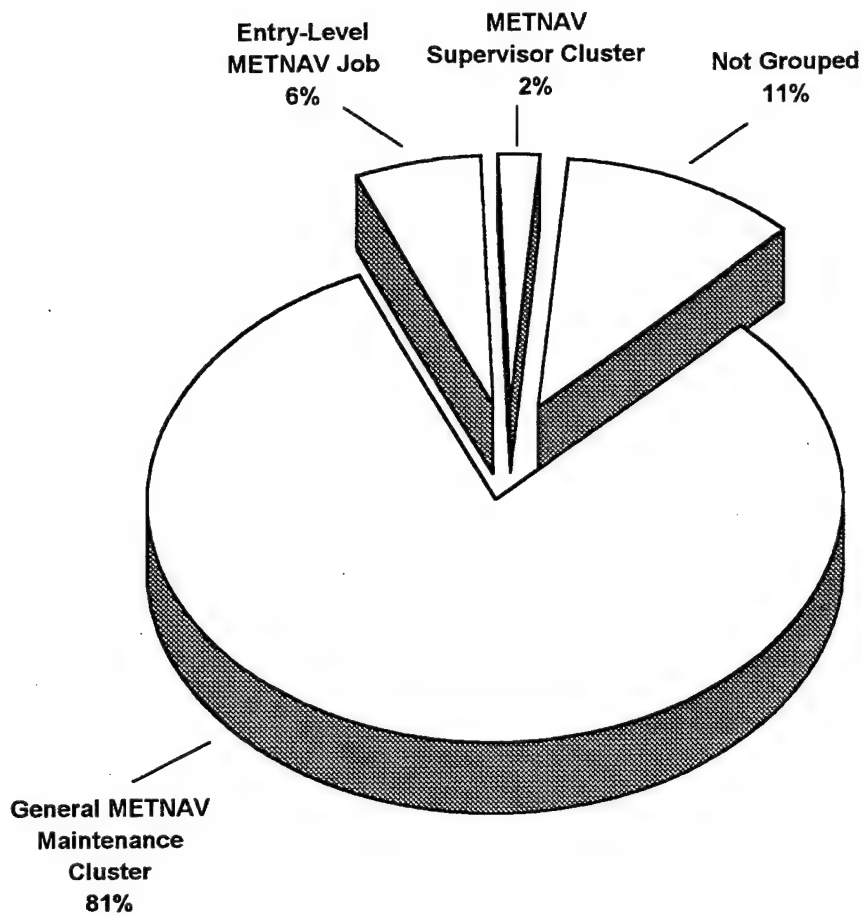


FIGURE 2

TABLE 13

RELATIVE PERCENT TIME SPENT ON DUTIES BY
FIRST-JOB PERSONNEL (1-24 MONTHS' TAFMS)
(N=31)

DUTIES	PERCENT TIME SPENT
A PERFORMING GENERAL MAINTENANCE ACTIVITIES	45
B MAINTAINING NONELECTRIC METEOROLOGICAL INSTRUMENTS AND SOLID- STATE BAROMETERS	3
C MAINTAINING WIND, TEMPERATURE, VISIBILITY, THUNDERSTORM SENSING, AND CLOUD SETS	12
D MAINTAINING NEXT GENERATION RADAR (NEXRAD) PRINCIPLE USER PROCESSORS (PUPs)	1
E MAINTAINING WIND, TEMPERATURE, AND CLOUD TACTICAL WEATHER EQUIPMENT	1
F MAINTAINING SOLAR OPTICAL AND RADIO OBSERVING EQUIPMENT	0
G INSTALLING OR REMOVING METEOROLOGICAL AND NAVIGATION SYSTEMS	3
H MAINTAINING LOW FREQUENCY BEACON (LFB) SYSTEMS	1
I MAINTAINING AN/GRN-29 SOLID-STATE INSTRUMENT LANDING SYSTEMS (SSILSs)	14
J MAINTAINING MARKER BEACONS	-
K MAINTAINING VHF OMNIRANGE (VOR) SYSTEMS	5
L MAINTAINING AN/TRN-26/26B TACAN SYSTEMS AND OE-258/URN MODULATION GENERATORS	2
M MAINTAINING AN/TRN-41 TACAN SYSTEMS	-
N MAINTAINING AN/FRN-45/46 TACAN SYSTEMS	6
O PERFORMING FLIGHT INSPECTIONS	-
P PERFORMING MOBILITY REQUIREMENTS	1
Q PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	1
R PERFORMING TRAINING ACTIVITIES	-
S PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	1
T PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2

" - " indicates less than 1 percent

TABLE 14

REPRESENTATIVE TASKS PERFORMED BY AFSC 2E1X2
FIRST-JOB PERSONNEL (1-24 MONTHS' TAFMS)

TASKS		PERCENT MEMBERS PERFORMING (N=31)
A0144	Remove or replace bulbs	97
A0104	Measure DC voltages	94
A0099	Maintain tool kits	87
A0125	Perform operational checks of power supplies	87
A0112	Perform corrosion control procedures	84
A0027	Analyze indications of built-in tests (BITs)	84
C0260	Perform turn on-off procedures for CT-12K and check for normal indications	81
A0029	Analyze system block diagram functional operations	81
C0237	Complete FMQ-8 performance tests	81
C0266	Perform turn on-off procedures for IP-1456 and check for normal indications	81
A0101	Measure AC voltages	81
A0134	Perform preventive maintenance inspections (PMIs) on bail-out systems	77
A0051	Evaluate equipment parameters, such as meter readings	77
C0262	Perform turn on-off procedures for FMQ-8 and check for normal indications	77
C0259	Perform operational tests of CT-12K with maintenance terminal	77
C0264	Perform turn on-off procedures for FMQ-13 and check for normal indications	77
C0254	Perform operational checks of FMQ-8 temperature-dew point measuring sets	77
A0030	Analyze system circuit operations	77
A0206	Trace circuits or signals using block or circuit diagrams	77
A0135	Perform radiation pattern ground checks	74
A0205	Test bail-out alarm systems	74
A0152	Remove or replace dummy loads	74
A0138	Record radiation pattern ground check readings	74
C0230	Align FMQ-8 dewpoint and ambient air temperature mechanisms	74
C0238	Complete FMQ-13 performance tests	74

* Average Number of Tasks Performed - 209

TABLE 15

RELATIVE PERCENT TIME SPENT ON DUTIES BY
FIRST-ENLISTMENT PERSONNEL
(N=101)

DUTIES	PERCENT TIME SPENT
A PERFORMING GENERAL MAINTENANCE ACTIVITIES	39
B MAINTAINING NONELECTRIC METEOROLOGICAL INSTRUMENTS AND SOLID-STATE BAROMETERS	3
C MAINTAINING WIND, TEMPERATURE, VISIBILITY, THUNDERSTORM SENSING, AND CLOUD SETS	10
D MAINTAINING NEXT GENERATION RADAR (NEXRAD) PRINCIPLE USER PROCESSORS (PUPs)	1
E MAINTAINING WIND, TEMPERATURE, AND CLOUD TACTICAL WEATHER EQUIPMENT	1
F MAINTAINING SOLAR OPTICAL AND RADIO OBSERVING EQUIPMENT	1
G INSTALLING OR REMOVING METEOROLOGICAL AND NAVIGATION SYSTEMS	3
H MAINTAINING LOW FREQUENCY BEACON (LFB) SYSTEMS	1
I MAINTAINING AN/GRN-29 SOLID-STATE INSTRUMENT LANDING SYSTEMS (SSILSs)	16
J MAINTAINING MARKER BEACONS	-
K MAINTAINING VHF OMNIRANGE (VOR) SYSTEMS	5
L MAINTAINING AN/TRN-26/26B TACAN SYSTEMS AND OE-258/URN MODULATION GENERATORS	3
M MAINTAINING AN/TRN-41 TACAN SYSTEMS	-
N MAINTAINING AN/FRN-45/46 TACAN SYSTEMS	7
O PERFORMING FLIGHT INSPECTIONS	-
P PERFORMING MOBILITY REQUIREMENTS	1
Q PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2
R PERFORMING TRAINING ACTIVITIES	1
S PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	2
T PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	3

" - " indicates less than 1 percent

TABLE 16

REPRESENTATIVE TASKS PERFORMED BY AFSC 2E1X2
FIRST-ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=101)
A0104	Measure DC voltages	91
A0144	Remove or replace bulbs	90
A0112	Perform corrosion control procedures	88
A0029	Analyze system block diagram functional operations	84
A0101	Measure AC voltages	83
A0099	Maintain tool kits	82
A0206	Trace circuits or signals using block or circuit diagrams	81
A0043	Communicate over radio during operational tests	80
A0030	Analyze system circuit operations	79
C0260	Perform turn on-off procedures for CT-12K and check for normal indications	78
C0262	Perform turn on-off procedures for FMQ-8 and check for normal indications	78
C0264	Perform turn on-off procedures for FMQ-13 and check for normal indications	78
C0237	Complete FMQ-8 performance tests	77
C0254	Perform operational checks of FMQ-8 temperature-dew point measuring sets	77
A0170	Remove or replace power supplies	77
A0064	Inspect protective or safety equipment	76
C0259	Perform operational tests of CT-12K with maintenance terminal	76
A0051	Evaluate equipment parameters, such as meter readings	76
A0152	Remove or replace dummy loads	76
C0238	Complete FMQ-13 performance tests	76
A0110	Paint equipment or shelters	76
A0056	Inspect electrical wiring	75
C0245	Isolate malfunctions in FMQ-8 systems	75
A0091	Isolate malfunctions in power supplies	75
A0136	Prepare test equipment for test measurement diagnostic equipment (TMDE) processing	74

* Average Number of Tasks Performed - 252

TABLE 17

TEST EQUIPMENT USED OR OPERATED BY
FIRST-ENLISTMENT AFSC 2E1X2 PERSONNEL

EQUIPMENT	1ST ENL (N=101)
Oscilloscopes	96
Dummy Loads	92
Digital Multimeters	91
Spectrum Analyzers	90
Peak Power Meters	88
Electronic Frequency Counters	86
Portable ILS Receivers	80
Wattmeters	77
Directional Couplers	76
Vector Voltmeters	76
Logic Probes	74
Digital Voltmeters	73
In-Line Attenuators	69
Fixed, 50-3 or 50-5 Attenuators	66
RF Sweep Signal Generators	61
Portable Field ILS Detectors	57
Audio Signal Generators	56
Variable Attenuators	53
Stopwatches	52
Set Attenuators	50

TABLE 18

WEATHER EQUIPMENT MAINTAINED BY
FIRST-ENLISTMENT AFSC 2E1X2 PERSONNEL

EQUIPMENT	1ST ENL (N=101)
AN/FMQ-8 Temperature-Dew Point Measuring Sets	79
AN/FMQ-13 Wind Measuring Sets	79
AN/GMQ-34 Cloud Height Measuring Sets	77
CT-12K Cloud Height Measuring Sets	77
ML-658/GM Digital Altimeter-Barometers	70
ML-17 Rain Gauges	69
ML-24 Sling Psychrometers	68
AN/GMQ-32 Transmissometer Sets	67
IP-1456 Cloud Height Measuring Sets	66
ML-102 Aneroid Barometers	63

TABLE 19

NAVIGATION EQUIPMENT MAINTAINED BY
FIRST-ENLISTMENT AFSC 2E1X2 PERSONNEL

EQUIPMENT	1ST ENL (N=101)
AN/FRN-45 TACAN	65
AN/GRN-29 ILS with Null Reference Glideslope	56
AN/GRN-29 ILS with Capture Effect Glideslope	35
AN/GRN-27 ILS with AN/GRN-30 Antenna System	24
AN/FRN-44 VOR	20
AN/FRN-43 VORTAC	19
OE-258/URN Modulation Generator	16

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary factors that can assist technical school personnel in deciding which tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior career ladder NCOs working at operational units in the field, are collected to provide training personnel with a rank-ordering of those tasks in the JI considered important for first-enlistment personnel training, along with a measure of the difficulty of the JI tasks. When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors (TE and TD), accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings but low percentages performing may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist technical school personnel, AFOMS has developed a computer program that incorporates these secondary factors and the percentage of first-enlistment personnel performing each task to produce an Automated Training Indicator (ATI) for each task. ATIs correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 2, AETCI 36-2601, and allow course personnel to quickly focus their attention on those tasks which are most likely to qualify for initial resident course consideration.

Table 20 presents tasks with the highest TE ratings for AFSC 2E1X2 first-enlistment airmen. For example, this table shows that TE raters reported tasks such as analyzing system block diagram functional operations and operating portable ILS receivers require a high degree of training emphasis. In general, tasks covering the maintenance of the AN/GRN-29 SSILS and the AN/FRN-45/46 TACAN are given high TE ratings, and the data indicate that most airmen in their first job and within their first enlistment are performing these tasks.

Table 21 displays those tasks AFSC 2E1X2 raters judged to be the most difficult to learn to perform satisfactorily. This table shows that TD raters reported installing or removing SSILS localizer systems and installing or removing VHF omnirange (VOR) and TACAN to be among the most difficult tasks to learn to perform satisfactorily. Due to the low numbers of individuals performing these types of tasks, however, they would be inappropriate for inclusion in a resident curriculum and are more appropriately taught as OJT items.

Various lists of tasks, accompanied by TE and TD ratings, and where appropriate, ATI information, are contained in the TRAINING EXTRACT package and should be reviewed in detail by training school personnel. (For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.)

TABLE 20

TASKS RATED HIGHEST IN TRAINING EMPHASIS

TASKS	TNG EMP*	PERCENT MEMBERS PERFORMING			TSK DIF**
		1ST		ENL (N =101)	
		1ST JOB (N=31)			
A0029	6.47	81	84	5.44	
N0726	6.42	48	62	4.68	
I0530	6.40	52	66	4.83	
N0722	6.20	55	63	5.56	
I0497	6.18	61	71	6.03	
I0495	6.16	55	67	5.92	
N0705	6.16	48	61	7.50	
I0489	6.11	42	51	6.08	
I0490	6.09	58	68	5.79	
N0727	6.09	58	67	4.82	
I0494	6.07	52	66	5.72	
I0517	6.04	48	56	5.15	
I0524	6.02	58	68	4.63	
A0104	6.02	94	91	3.33	
N0707	6.02	48	59	6.07	
I0527	6.02	65	72	4.63	
N0704	6.00	45	56	8.09	
I0488	6.00	42	50	5.68	
I0491	6.00	58	69	6.05	
I0525	6.00	58	68	4.99	
I0496	5.98	61	70	5.71	
I0518	5.93	55	58	4.54	
N0723	5.93	45	58	4.55	

* Mean TE Rating is 1.49, and Standard Deviation is 1.25 (High TE = 2.74)

** Average TD Rating is 5.00

TABLE 21

TASKS RATED HIGHEST IN TASK DIFFICULTY

PERCENT MEMBERS PERFORMING							
TASKS	TSK DIF	1ST JOB (N=31)	1ST ENL (N=101)	3-SKL LVL (N=73)	5-SKL LVL (N=178)	7-SKL LVL (N=88)	TNG EMP
G0416	8.60	13	15	21	9	10	.93
G0421	8.50	3	9	8	11	6	.91
G0422	8.36	3	8	7	6	7	.78
G0415	8.34	13	16	22	9	11	.93
N0704	8.09	45	56	55	62	52	6.00
A0045	7.74	35	45	51	35	35	2.09
N0705	7.50	48	61	62	63	55	6.16
G0425	7.49	10	28	29	34	30	1.69
G0418	7.40	10	17	16	12	6	.71
G0393	7.37	10	20	22	16	16	1.00
A0046	7.31	35	39	42	35	35	2.53
N0729	7.31	26	39	37	45	39	3.24
K0582	7.25	16	22	23	21	18	3.53
G0397	7.22	16	20	21	16	15	.98
A0028	7.22	71	72	74	66	63	5.20
K0586	7.13	23	25	23	27	20	4.47
K0593	7.12	16	23	21	25	20	3.89
N0708	7.05	45	58	58	60	49	5.00
G0417	7.01	6	14	15	9	8	.71
C0229	6.99	3	7	10	3	8	1.44
N0716	6.99	45	54	58	59	51	4.91
N0715	6.97	45	59	59	63	55	5.71
G0441	6.91	0	4	7	4	5	.58
O0746	6.91	6	9	11	3	3	.73
K0595	6.89	23	25	23	26	20	4.16

* Mean TE Rating is 2.28, and Standard Deviation is 1.71 (High TE = 3.99)

** Average TD Rating is 5.00

Course Training Standard (CTS)

A comprehensive review of CTS 2E1X2, dated April 1997, was performed by comparing CTS elements to survey data. Technical school personnel from the 338th Training Squadron, Keesler AFB MS, matched JI tasks to appropriate CTS elements. (The CTS elements containing general knowledge information, mandatory entries, subject-matter-knowledge-only requirements, or basic supervisory responsibilities were not examined.) Task knowledge and performance elements of the CTS were compared against the standard set forth in AETCI 36-2601 and AFI 36-2623. Typically, CTS elements that are matched to tasks with sufficiently high TE and TD ratings and are performed by at least 20 percent of personnel in appropriate skill-level groups, such as first-job (1-24 months' TAFMS) members and 3-skill level members, should be considered for inclusion in the CTS. Likewise, elements matched to tasks with less than 20 percent performing in these groups should be considered for deletion from the CTS.

All 2E1X2 CTS elements matched to JI tasks are well supported by occupational survey data. However, Table 22 lists examples of tasks not referenced to CTS elements with 20 percent or more first-job, first-enlistment, or 3-skill level members performing. The majority of these tasks have high percent members performing, high TE ratings, and average TD ratings. These tasks have the highest ATI rating of 18 and deal with AN/FRN-45/46 and AN/GRN-29 maintenance. Tasks not referenced to any element of the CTS are listed at the end of the CTS computer listing of the Training Extract. Training personnel should review these tasks for possible inclusion in the CTS.

Plan of Instruction (POI)

JI tasks were matched to related training objectives in the E3ABR2E132-001 POI, dated 21 January 1999, for the entry-level course with assistance from 338th Training Squadron personnel. The method employed was similar to that of the CTS percent members performing data for first-job (1-24 months' TAFMS), first-enlistment (1-48 months' TAFMS), and TE, TD, and ATI ratings.

POI blocks, units of instruction, and learning objectives were compared to the standard criteria set forth in AETCI 36-2601, dated 5 July 1996 (30 percent or more of the first-enlistment group performing tasks trained along with sufficiently high TE and TD ratings on those tasks). Tasks trained in the course that do not meet these criteria should be considered for possible deletion from the course.

The review of tasks matched to the E3ABR2E132-001 POI revealed that the POI is well supported by occupational survey data. Only four elements, shown below with associated tasks, were found to be unsupported and are as follows:

UNIT	LEARNING OBJECTIVE	PERCENT MEMBERS PERFORMING		
		TNG EMP	1ST JOB	1ST ENL
VII.3.b.	<i>VORTAC - IOT Operation - Using T.O. 31R4-2FRN43-2-34GE-1, operate an IOT to display the different Master Menu items.</i>			
Task	K0605. Operate AN/FRN-44 input/output terminals	4.67	23	24
VII.4.b.	<i>VORTAC - Using T.O. 31R4-2FRN44-2-32JG-1, align the Digital Computer Power Supply.</i>			
Task	K0572. Align AN/FRN-44 system power supply control cards	4.40	23	26
X.6.a.	<i>VOR - Transmitter Alignments - Using T.O. 31R4-2FRN-2-32GS-1, perform turn-on/off procedures.</i>			
Task	K0611. Perform VOR turn on-off procedures and check for normal indications	5.09	23	25
X.10.a.	<i>VOR Troubleshooting - Using T.O. 31R4-2FRN44-2-32FI-1, identify faulty circuit cards or assemblies.</i>			
Task	K0605. Operate AN/FRN-44 input/output terminals	4.67	23	24

The list of tasks not referenced to POI elements with 30 percent or more first-job or first-enlistment members performing was very similar to the list of tasks not referenced to the CTS elements. As a result, the examples of tasks not referenced to the POI are also found in Table 22. Tasks not referenced to any element of the POI are listed at the end of the POI computer listing of the Training Extract. As with the CTS, training personnel should review these tasks for possible inclusion in the POI.

TABLE 22

EXAMPLES OF TASKS NOT REFERENCED TO CTS ELEMENTS
WITH 20 PERCENT OR MORE MEMBERS PERFORMING AND
POI ELEMENTS WITH 30 PERCENT OR MORE MEMBERS PERFORMING

TASKS	TNG EMP	PERCENT MEMBERS PERFORMING			TASK DIFF	ATI
		1ST JOB (N=31)	1ST ENL (N=101)	3-SKL LVL (N=73)		
N0704	6.00	45	56	55	8.09	18
I0523	5.64	52	64	64	5.27	18
I0536	5.49	52	60	60	5.65	18
I0515	5.40	55	65	67	5.77	18
N0720	5.40	48	57	58	5.71	18
I0535	5.38	45	62	63	6.21	18
A0108	5.36	65	63	66	5.83	18
I0499	5.36	42	61	60	5.60	18
I0508	5.33	52	65	67	5.46	18
I0492	5.31	55	66	66	6.56	18
I0533	5.29	52	62	60	5.61	18
N0718	5.24	45	55	56	5.81	18
N0724	5.22	48	59	59	6.03	18
I0487	5.18	52	63	62	6.66	18
A0040	5.11	52	61	62	6.81	18
I0484	5.11	48	61	60	6.61	18
I0532	5.09	48	63	64	5.85	18
I0505	5.07	52	64	64	5.59	18
N0708	5.00	45	58	58	7.05	18
I0502	4.93	52	65	64	5.06	18
N0728	4.93	42	58	56	5.94	18
N0716	4.91	45	54	58	6.99	18
I0507	4.80	55	66	66	5.18	18
N0711	4.60	48	55	56	6.67	18

* Mean TE Rating = 2.28 Standard Deviation = 1.71 High TE = 2.99

** Mean TD Rating = 5.00 Standard Deviation = 1.00 High TD = 6.00

JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators of various groups can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. Attitude questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the survey to provide indications of job satisfaction.

Table 23 presents job satisfaction data for AFSC 2E1X2 TAFMS groups, together with TAFMS data for a comparative sample of Logistics career ladders surveyed in 1998. First-enlistment personnel rated perception of job interest, utilization of talents, utilization of training, and sense of accomplishment gained from work higher than the comparative sample. They also have slightly higher reenlistment intentions than the comparative sample. Second-enlistment personnel rated job interest and sense of accomplishment lower than the comparative sample. However, the ratings for utilization of talents and training are higher than the 1998 comparative sample for the second-enlistment personnel. Their reenlistment intentions are much lower than the intentions of the Logistics comparative sample. Members with over 8 years' TAFMS rated all areas higher than the comparative sample with the exception of reenlistment intentions which they rated slightly lower.

An indication of how job satisfaction perceptions have changed over time is provided in Table 24, where TAFMS data for the current survey respondents are compared to the 1996 survey respondents' perceptions. Job interest has increased for first-enlistment and career airmen over the past 4 years but has decreased slightly for second-enlistment personnel. Sense of accomplishment has also decreased for the 49-96 months' TAFMS group. Reenlistment intentions are lower for all TAFMS groups compared to the 1996 survey, most notably among the second-enlistment members. Utilization of training, however, has increased greatly for all TAFMS groups, and training personnel are to be commended for the effectiveness of their improvements incorporated in the METNAV training programs.

In Table 25, a review of the job satisfaction ratings for the specialty clusters and job identified in this survey reveals high satisfaction ratings for all areas among the METNAV members. The lowest ratings are from Entry-Level METNAV Job members except for perceived utilization of training in which all entry-level members indicated their training is being used well. The reenlistment intentions are also extremely low for the Entry-Level METNAV Job members.

TABLE 23

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49 - 96 MOS TAFMS		97+ MOS TAFMS	
	1999 2E1X2 (N=101)	COMP SAMPLE* (N=5,173)	1999 2E1X2 (N=46)	COMP SAMPLE* (N=2,651)	1999 2E1X2 (N=192)	COMP SAMPLE* (N=6,033)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	77	67	63	67	83	73
SO-SO	13	19	20	19	10	17
DULL	10	14	17	14	7	10
<u>PERCEIVED UTILIZATION OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY	81	75	80	77	93	82
LITTLE OR NOT AT ALL	19	25	20	23	7	18
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
FAIRLY WELL TO PERFECTLY	90	84	89	79	92	76
LITTLE OR NOT AT ALL	10	16	11	21	8	24
<u>SENSE OF ACCOMPLISHMENT GAINED FROM WORK:</u>						
SATISFIED	78	66	59	65	83	69
NEUTRAL	9	17	15	14	7	12
DISSATISFIED	13	17	26	21	10	19
<u>REENLISTMENT INTENTIONS:</u>						
YES OR PROBABLY YES	48	47	41	61	65	69
NO OR PROBABLY NO	52	53	59	38	10	10
PLAN TO RETIRE	0	0	0	1	25	21

* Comparative sample of Logistics career ladders surveyed in 1998, including AFSCs 2E0X1, 2E1X1, 2E1X3, and 2E3X1.

TABLE 24

COMPARISON OF CURRENT SURVEY AND 1996 TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49 - 96 MOS TAFMS		97+ MOS TAFMS	
	1999 2E1X2 (N=101)	1996 2E1X2 (N=96)	1999 2E1X2 (N=46)	1996 2E1X2 (N=157)	1999 2E1X2 (N=192)	1996 2E1X2 (N=298)
EXPRESSED JOB INTEREST:						
INTERESTING	77	70	63	72	83	77
SO-SO	13	13	20	19	10	13
DULL	10	17	17	9	7	10
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	81	77	80	78	93	83
LITTLE OR NOT AT ALL	19	23	20	22	7	17
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	90	79	89	75	92	75
LITTLE OR NOT AT ALL	10	21	11	25	8	25
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	78	65	59	69	83	71
NEUTRAL	9	10	15	10	7	9
DISSATISFIED	13	24	26	21	10	20
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	48	56	41	72	65	72
NO OR PROBABLY NO	52	40	59	28	10	9
PLAN TO RETIRE	0	0	0	0	25	19

EXPRESSED JOB INTEREST:

INTERESTING
SO-SO
DULL

PERCEIVED UTILIZATION OF TALENTS:

FAIRLY WELL TO PERFECTLY
LITTLE OR NOT AT ALL

PERCEIVED UTILIZATION OF TRAINING:

FAIRLY WELL TO PERFECTLY
LITTLE OR NOT AT ALL

SENSE OF ACCOMPLISHMENT GAINED FROM WORK:

SATISFIED
NEUTRAL
DISSATISFIED

REENLISTMENT INTENTIONS:

YES OR PROBABLY YES
NO OR PROBABLY NO
PLAN TO RETIRE

TABLE 25

COMPARISON OF JOB SATISFACTION INDICATORS BY SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)

	General METNAV Maint Cluster (STG021) (N=252)	Entry-Level METNAV Job (STG039) (N=8)	METNAV Supervisor Job (STG022) (N=38)
<u>EXPRESSED JOB INTEREST:</u>			
INTERESTING	78	63	79
SO-SO	13	13	5
DULL	9	24	16
<u>PERCEIVED UTILIZATION OF TALENTS:</u>			
FAIRLY WELL TO PERFECTLY	87	75	89
LITTLE OR NOT AT ALL	13	25	11
<u>PERCEIVED UTILIZATION OF TRAINING:</u>			
FAIRLY WELL TO PERFECTLY	94	100	87
LITTLE OR NOT AT ALL	6	0	13
<u>SENSE OF ACCOMPLISHMENT GAINED FROM WORK:</u>			
SATISFIED	80	63	79
NEUTRAL	8	0	5
DISSATISFIED	12	37	16
<u>REENLISTMENT INTENTIONS:</u>			
YES OR PROBABLY YES	59	25	45
NO OR PROBABLY NO	28	75	26
WILL RETIRE	13	0	29

IMPLICATIONS

This survey was initiated to provide current job and task data for use in evaluating the AFMAN 36-2108 *Specialty Description* and appropriate training documents. Survey results clearly indicate that the present classification structure, as described in the latest specialty description, accurately portrays the jobs performed in this career ladder.

Entry-level training programs for AFSC 2E1X2 personnel appear to be working well as indicated by the previously noted positive response patterns by various groups to the question pertaining to training utilization. The survey data indicate that the career ladder training documents are well supported. Some adjustments may be warranted as discussed in the CTS and POI analysis sections of this report.

The career ladder progression is typical with the move from technical work at the 3- and 5-skill levels to supervisory and management tasks at the 7-skill level. About fifty percent of the tasks performed by 7-skill level members are technical in nature.

Job satisfaction is higher for first-enlistment members and lower for second-enlistment members than the comparative sample of like Logistics AFSCs. All TAFMS groups rate perceived utilization of training higher than the comparative sample. The 48-96 months' TAFMS group indicated that they are less satisfied with the sense of accomplishment they gain from their work, and this is evident in their lower reenlistment intention ratings compared to members in the 1-48 months' and 97+ months' TAFMS groups.

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APPENDIX A

**SELECTED REPRESENTATIVE TASKS PERFORMED
BY SPECIALTY JOB GROUPS**

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TABLE A1

GENERAL METNAV MAINTENANCE CLUSTER (STG021)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
A0104	Measure DC voltages	97
A0144	Remove or replace bulbs	95
A0101	Measure AC voltages	95
A0206	Trace circuits or signals using block or circuit diagrams	92
A0029	Analyze system block diagram functional operations	91
A0043	Communicate over radio during operational tests	90
A0112	Perform corrosion control procedures	90
A0030	Analyze system circuit operations	88
A0091	Isolate malfunctions in power supplies	88
A0170	Remove or replace power supplies	88
T0865	Identify parts using illustrated parts breakdowns (IPBs)	87
I0527	Measure AN/GRN-29 localizer course transmitter power outputs	87
A0173	Remove or replace printed circuit cards	87
A0051	Evaluate equipment parameters, such as meter readings	87
A0095	Isolate malfunctions in transmitters	87
I0520	Measure AN/GRN-29 glideslope course transmitter power outputs	86
I0497	Align AN/GRN-29 localizer course transmitters	86
I0522	Measure AN/GRN-29 localizer antenna VSWRs	86
A0152	Remove or replace dummy loads	86
I0524	Measure AN/GRN-29 localizer clearance transmitter power outputs	86
I0519	Measure AN/GRN-29 glideslope course transmitter percent-of-modulation	86
I0526	Measure AN/GRN-29 localizer course transmitter ID percent-of-modulation	86
I0496	Align AN/GRN-29 localizer course monitors	86
A0131	Perform operational checks of transmitters	85
I0516	Measure AN/GRN-29 glideslope antenna VSWRs	85

TABLE A2

METNAV NCOIC JOB (STG063)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
Q0818	Write recommendations for awards or decorations	100
Q0817	Write or indorse military performance reports	100
Q0795	Evaluate performance of meteorological and navigation systems	100
Q0803	Interpret policies, directives, or procedures for subordinates	100
Q0779	Develop or establish work schedules	100
Q0810	Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals	100
Q0793	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	100
Q0778	Develop or establish work methods or procedures	100
Q0796	Evaluate personnel for compliance with performance standards	100
R0834	Evaluate progress of trainees	100
R0822	Brief personnel concerning training programs or matters	100
Q0802	Inspect personnel for compliance with military standards	100
Q0819	Write replies to inspection reports	100
S0860	Review supply transaction listings or rosters	100
Q0813	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	100
S0847	Maintain administrative files	100
S0859	Review due-in-from maintenance (DIFM) document listings	100
T0865	Identify parts using illustrated parts breakdowns (IPBs)	100
I0530	Operate portable ILS receivers	100
I0527	Measure AN/GRN-29 localizer course transmitter power outputs	100
I0532	Perform AN/GRN-29 glideslope flight-check ground procedures	100
N0727	Perform PMIs of AN/FRN-45/46 TACAN systems	100
I0520	Measure AN/GRN-29 glideslope course transmitter power outputs	100
I0524	Measure AN/GRN-29 localizer clearance transmitter power outputs	100
N0728	Remove or replace AN/FRN-45/46 system units or major subassemblies	100

TABLE A3

TACAN MAINTENANCE JOB (STG047)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
A0110	Paint equipment or shelters	100
L0631	Align AN/TRN-26 monitor peak power	100
L0667	Remove or replace AN/TRN-26 antennas	100
L0630	Align AN/TRN-26 monitor oscillators	100
L0637	Align AN/TRN-26 transmitters	100
A0144	Remove or replace bulbs	100
L0651	Isolate malfunctions in AN/TRN-26 systems	100
L0653	Isolate malfunctions in AN/TRN-26B system units or subassemblies	100
L0669	Remove or replace AN/TRN-26 system units or subassemblies	100
A0112	Perform corrosion control procedures	100
L0647	Inspect AN/TRN-26 antenna assemblies	100
L0648	Inspect AN/TRN-26 monitor readouts	100
L0664	Perform monitor turn on-off procedures and check for normal indications	100
A0111	Perform channel or frequency changes	100
L0622	Adjust AN/TRN-26 receiver-transmitter control sections	100
L0617	Adjust AN/TRN-26 antenna positioning	100
L0668	Remove or replace AN/TRN-26 monitors	100
L0615	Adjust AN/TRN-26 antenna control units	100
L0624	Adjust AN/TRN-26 receiver-transmitter power supply sections	100
L0663	Perform monitor receiver sensitivity alarm checks on AN/TRN-26 systems	100
L0662	Perform AN/TRN-26 monitor integrity checks	100
L0632	Align AN/TRN-26 monitor receiver or azimuth monitoring	100
L0625	Adjust AN/TRN-26 unit 4 control transfer units	100
L0621	Adjust AN/TRN-26 monitor reply delays	100
L0620	Adjust AN/TRN-26 monitor reference bursts	100

TABLE A4

ENTRY-LEVEL METNAV JOB (STG039)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
A0112	Perform corrosion control procedures	100
A0144	Remove or replace bulbs	100
A0043	Communicate over radio during operational tests	88
A0099	Maintain tool kits	88
A0064	Inspect protective or safety equipment	88
A0101	Measure AC voltages	88
A0141	Remove or replace air filters	88
A0104	Measure DC voltages	88
B0210	Adjust or align ML-658 digital altimeter-barometers	88
A0148	Remove or replace dessicants	88
A0098	Lace or tie-wrap wiring assemblies	88
B0212	Inspect ML-24 sling psychrometers	88
B0217	Perform operational checks of ML-24 sling psychrometers	88
A0134	Perform preventive maintenance inspections (PMIs) on bail-out systems	75
C0262	Perform turn on-off procedures for FMQ-8 and check for normal indications	75
C0254	Perform operational checks of FMQ-8 temperature-dew point measuring sets	75
A0054	Inspect dessicants	75
C0237	Complete FMQ-8 performance tests	75
C0238	Complete FMQ-13 performance tests	75
A0206	Trace circuits or signals using block or circuit diagrams	75
C0260	Perform turn on-off procedures for CT-12K and check for normal indications	75
C0264	Perform turn on-off procedures for FMQ-13 and check for normal indications	75
C0266	Perform turn on-off procedures for IP-1456 and check for normal indications	75
A0053	Initiate BITs	75
A0110	Paint equipment or shelters	75

TABLE A5

METNAV SUPERVISOR CLUSTER (STG022)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
S0847	Maintain administrative files	82
Q0814	Write inspection reports	79
Q0819	Write replies to inspection reports	76
Q0802	Inspect personnel for compliance with military standards	76
S0841	Compile data for records, reports, logs, or trend analyses	74
Q0803	Interpret policies, directives, or procedures for subordinates	74
R0833	Evaluate effectiveness of training programs, plans, or procedures	71
Q0796	Evaluate personnel for compliance with performance standards	71
Q0776	Develop self-inspection or self-assessment program checklists	71
Q0766	Conduct self-inspections or self-assessments	68
Q0792	Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) program	68
Q0791	Evaluate inspection report findings or inspection procedures	66
Q0767	Conduct staff assistance visits, inspections, or audits	66
Q0810	Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals	66
Q0793	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	66
Q0765	Conduct safety inspections of equipment or facilities, other than protective or safety equipment	66
S0857	Research maintenance records or reports	61
Q0795	Evaluate performance of meteorological and navigation systems	61
Q0773	Develop inspection schedules	61
R0825	Conduct on-the-job training (OJT)	61
R0837	Maintain training records or files	61
Q0772	Determine or establish work assignments or priorities	58
S0851	Maintain or update status indicators, such as boards, graphs, or charts	58
Q0820	Write staff studies, surveys, or routine reports, other than training or inspection reports	58
Q0784	Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	58

TABLE A6

QUALITY ASSURANCE JOB (STG057)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
Q0814	Write inspection reports	100
Q0802	Inspect personnel for compliance with military standards	100
A0069	Inspect towers or supports for loose hardware, tension, or level	100
A0055	Inspect electrical grounding systems	100
A0064	Inspect protective or safety equipment	100
A0056	Inspect electrical wiring	100
A0059	Inspect lead-acid batteries or battery boxes	100
Q0819	Write replies to inspection reports	86
Q0796	Evaluate personnel for compliance with performance standards	86
Q0795	Evaluate performance of meteorological and navigation systems	86
I0505	Inspect AN/GRN-29 glideslope phasing assemblies	86
I0508	Inspect AN/GRN-29 localizer distribution units	86
I0509	Inspect AN/GRN-29 remote control units	86
I0503	Inspect AN/GRN-29 glideslope antenna systems	86
I0507	Inspect AN/GRN-29 localizer antenna systems	86
I0506	Inspect AN/GRN-29 interlock control units	86
K0588	Inspect local monitors	86
K0589	Inspect remote monitors	86
K0587	Inspect field detectors	86
N0713	Inspect AN/FRN-45/46 TACAN antenna towers	86
Q0793	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	86
A0067	Inspect support cables	86
A0054	Inspect dessicants	86
I0504	Inspect AN/GRN-29 glideslope course transmitters	71
S0847	Maintain administrative files	71

TABLE A7

METNAV SUPERINTENDENT JOB (STG065)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
Q0803	Interpret policies, directives, or procedures for subordinates	95
Q0766	Conduct self-inspections or self-assessments	95
Q0764	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	95
Q0819	Write replies to inspection reports	89
Q0814	Write inspection reports	89
R0833	Evaluate effectiveness of training programs, plans, or procedures	89
Q0776	Develop self-inspection or self-assessment program checklists	89
Q0810	Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals	89
Q0771	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	89
Q0809	Review budget requirements	89
Q0765	Conduct safety inspections of equipment or facilities, other than protective or safety equipment	89
Q0802	Inspect personnel for compliance with military standards	89
Q0813	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	89
Q0769	Conduct supervisory orientations for newly assigned personnel	89
Q0820	Write staff studies, surveys, or routine reports, other than training or inspection reports	84
S0841	Compile data for records, reports, logs, or trend analyses	84
Q0767	Conduct staff assistance visits, inspections, or audits	84
Q0818	Write recommendations for awards or decorations	84
Q0793	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	84
R0834	Evaluate progress of trainees	84
S0847	Maintain administrative files	84
Q0778	Develop or establish work methods or procedures	84
Q0792	Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) program	84
Q0815	Write job or position descriptions	84
Q0780	Draft budget requirements	84

TABLE A8

METNAV TRAINING JOB (STG041)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
R0825	Conduct on-the-job training (OJT)	100
S0847	Maintain administrative files	100
T0868	Maintain core automated maintenance system (CAMS) workcenter listings	83
R0829	Develop or procure training materials or aids	83
R0837	Maintain training records or files	83
S0844	Initiate or maintain standby rosters or workcenter pyramid recall rosters	83
Q0784	Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	83
Q0776	Develop self-inspection or self-assessment program checklists	83
T0869	Maintain equipment status reports	67
S0851	Maintain or update status indicators, such as boards, graphs, or charts	67
R0833	Evaluate effectiveness of training programs, plans, or procedures	67
S0857	Research maintenance records or reports	67
T0872	Maintain PMI listings	67
R0830	Develop training programs, plans, or procedures	67
S0841	Compile data for records, reports, logs, or trend analyses	67
R0827	Determine training requirements	67
Q0785	Establish procedures for notifying agencies of equipment failures	67
S0849	Maintain time compliance technical orders (TCTOs)	67
S0848	Maintain publications libraries or files, other than TO libraries or files	67
Q0779	Develop or establish work schedules	67
Q0788	Establish performance standards for subordinates	50
T0879	Prepare maintenance data collection reports	50
R0822	Brief personnel concerning training programs or matters	50

APPENDIX B
TASK MODULES FOR CAREER LADDER JOBS

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These task modules (TMs) were developed to illustrate the content of jobs by summarizing tasks performed in common by incumbents across the Meteorological and Navigation Systems career ladder. These TMs were derived by statistical clustering in CODAP that identifies groups of related tasks and groups them together to form TMs. The process for identifying these related tasks is called copformance. Copformance assumes that if incumbents perform task A and task B, there is a high likelihood that the two tasks share common skills and knowledge and can be trained together. For example, if an individual performs one METNAV task, the probability is very high that he or she also will perform other METNAV tasks. Thus, the group of tasks can be considered a "natural group" of associated or related tasks (see TM 0001) below. CODAP calculates an index of copformance for each task with every other task by examining the task performance patterns of all the survey respondents as a whole. The statistical clustering generally approximated these "natural groupings".

The title of each TM is our best estimate as to the general subject content of the group of tasks. These TMs are useful for organizing the task data into more meaningful units and as a way to organize the information. Other strategies may also be valid.

0001 AN/GRN-29 ILS MAINTENANCE

- 1 I0484 Adjust AN/GRN-29 glideslope phasing assemblies
- 2 I0485 Adjust AN/GRN-29 localizer far-field monitor power supply output voltages
- 3 I0486 Align AN/GRN-29 control indicators
- 4 I0487 Align AN/GRN-29 glideslope amplitude phase control units
- 5 I0490 Align AN/GRN-29 glideslope course monitors
- 6 I0491 Align AN/GRN-29 glideslope course transmitters
- 7 I0492 Align AN/GRN-29 glideslope monitor combining/distribution units
- 8 I0494 Align AN/GRN-29 localizer clearance monitors
- 9 I0495 Align AN/GRN-29 localizer clearance transmitters
- 10 I0496 Align AN/GRN-29 localizer course monitors
- 11 I0497 Align AN/GRN-29 localizer course transmitters
- 12 I0498 Align AN/GRN-29 localizer far-field monitors
- 13 I0499 Align AN/GRN-29 localizer far-field receivers
- 14 I0500 Align AN/GRN-29 localizer monitor combining/distribution units
- 15 I0501 Align AN/GRN-29 power supplies
- 16 I0502 Align AN/GRN-29 remote control units
- 17 I0503 Inspect AN/GRN-29 glideslope antenna systems
- 18 I0504 Inspect AN/GRN-29 glideslope course transmitters
- 19 I0505 Inspect AN/GRN-29 glideslope phasing assemblies
- 20 I0506 Inspect AN/GRN-29 interlock control units
- 21 I0507 Inspect AN/GRN-29 localizer antenna systems
- 22 I0508 Inspect AN/GRN-29 localizer distribution units
- 23 I0509 Inspect AN/GRN-29 remote control units
- 24 I0510 Isolate malfunctions in AN/GRN-29 glideslope system units or major subassemblies
- 25 I0512 Isolate malfunctions in AN/GRN-29 localizer system units or major subassemblies
- 26 I0513 Isolate malfunctions in AN/GRN-29 remote control units
- 27 I0514 Measure AN/GRN-29 battery voltages
- 28 I0515 Measure AN/GRN-29 glideslope amplitude phase control unit output voltages or phases
- 29 I0516 Measure AN/GRN-29 glideslope antenna VSWRs
- 30 I0519 Measure AN/GRN-29 glideslope course transmitter percent-of-modulation
- 31 I0520 Measure AN/GRN-29 glideslope course transmitter power outputs
- 32 I0521 Measure AN/GRN-29 glideslope near-field monitor outputs
- 33 I0522 Measure AN/GRN-29 localizer antenna VSWRs

- 34 I0523 Measure AN/GRN-29 localizer clearance transmitter ID percent-of-modulation
 - 35 I0524 Measure AN/GRN-29 localizer clearance transmitter power outputs
 - 36 I0525 Measure AN/GRN-29 localizer clearance transmitter 90/150-Hz percent-of-modulation
 - 37 I0526 Measure AN/GRN-29 localizer course transmitter ID percent-of-modulation
 - 38 I0527 Measure AN/GRN-29 localizer course transmitter power outputs
 - 39 I0528 Measure AN/GRN-29 localizer course transmitter 90/150-Hz percent-of-modulation
 - 40 I0529 Measure AN/GRN-29 localizer distribution unit outputs
 - 41 I0530 Operate portable ILS receivers
 - 42 I0531 Perform AN/GRN-29 circuit breaker tests
 - 43 I0532 Perform AN/GRN-29 glideslope flight-check ground procedures
 - 44 I0533 Perform AN/GRN-29 glideslope monitor integrity checks
 - 45 I0535 Perform AN/GRN-29 localizer flight-check ground procedures
 - 46 I0536 Perform AN/GRN-29 localizer monitor integrity checks
 - 47 I0537 Perform AN/GRN-29 turn on-off procedures and check for normal indications
 - 48 I0538 Remove or replace AN/GRN-29 glideslope system units or major subassemblies
 - 49 I0540 Remove or replace AN/GRN-29 localizer system units or major subassemblies
-

0002 AN/FRN-45/46 TACAN Maintenance

- 1 N0698 Align AN/FRN-45/46 control indicator interface and codec cards
- 2 N0699 Align AN/FRN-45/46 digital computer clock and auxiliary interface cards
- 3 N0700 Align AN/FRN-45/46 digital computer digital data modems
- 4 N0701 Align AN/FRN-45/46 digital computer power supply control cards
- 5 N0702 Align AN/FRN-45/46 monitors
- 6 N0703 Align AN/FRN-45/46 system power supply control cards
- 7 N0704 Align AN/FRN-45/46 transponder 100-watt amplitude shaper controller assemblies
- 8 N0705 Align AN/FRN-45/46 transponder 400-watt amplifier assemblies
- 9 N0706 Align AN/FRN-45/46 transponder encoder cards
- 10 N0707 Align AN/FRN-45/46 transponder frequency synthesizer assemblies
- 11 N0708 Align AN/FRN-45/46 transponder preselector assemblies
- 12 N0709 Align AN/FRN-45/46 transponder receiver and programmable echo-level cards
- 13 N0710 Align AN/FRN-45/46 transponder video processors
- 14 N0711 Analyze AN/FRN-45/46 TACAN antenna radiation patterns
- 15 N0712 Initialize setup of input/output terminal or computer interface with AN/FRN-45/46 TACAN systems
- 16 N0714 Isolate malfunctions in AC power distribution systems
- 17 N0715 Isolate malfunctions in AN/FRN-45/46 system units or major subassemblies
- 18 N0716 Isolate malfunctions in AN/FRN-45/46 TACAN antennas
- 19 N0717 Measure AN/FRN-45/46 directional coupler losses
- 20 N0718 Measure AN/FRN-45/46 TACAN amplifier modulator output waveshapes
- 21 N0719 Measure AN/FRN-45/46 TACAN receiver sensitivity
- 22 N0720 Measure AN/FRN-45/46 TACAN receiver squitter counts
- 23 N0721 Measure AN/FRN-45/46 TACAN system spectrum
- 24 N0722 Measure AN/FRN-45/46 TACAN transmitter power outputs
- 25 N0723 Operate AN/FRN-45/46 input/output terminals
- 26 N0724 Perform AN/FRN-45/46 TACAN monitor alignments
- 27 N0725 Perform AN/FRN-45/46 TACAN system flight-check procedures
- 28 N0726 Perform AN/FRN-45/46 turn on-off procedures and check for normal indications
- 29 N0727 Perform PMIs of AN/FRN-45/46 TACAN systems
- 30 N0728 Remove or replace AN/FRN-45/46 system units or major subassemblies
- 31 N0730 Remove or replace AN/FRN-45/46 transponder 700-watt amplifier assemblies
- 32 N0732 Set AN/FRN-45/46 TACAN system ID codes

0003 AN/GRN-29 GLIDESLOPE MAINTENANCE

- 1 I0488 Align AN/GRN-29 glideslope clearance monitors
 - 2 I0489 Align AN/GRN-29 glideslope clearance transmitters
 - 3 I0517 Measure AN/GRN-29 glideslope clearance transmitter percent-of-modulation
 - 4 I0518 Measure AN/GRN-29 glideslope clearance transmitter power outputs
-

0004 AN/GRN-29 REMOTE CONTROL UNIT/INTERLOCK CONTROL UNIT MAINTENANCE

- 1 I0493 Align AN/GRN-29 interlock control units
 - 2 I0511 Isolate malfunctions in AN/GRN-29 interlock control units
 - 3 I0539 Remove or replace AN/GRN-29 interlock control units
 - 4 I0541 Remove or replace AN/GRN-29 remote control units
-

0005 WEATHER MEASUREMENT SET MAINTENANCE

- 1 A0148 Remove or replace dessicants
- 2 B0210 Adjust or align ML-658 digital altimeter-barometers
- 3 B0212 Inspect ML-24 sling psychrometers
- 4 B0213 Inspect ML-102 aneroid barometers
- 5 B0215 Inspect ML-658 digital altimeter-barometers
- 6 B0216 Isolate malfunctions in ML-658 digital altimeter-barometer systems
- 7 B0217 Perform operational checks of ML-24 sling psychrometers
- 8 B0218 Perform operational checks of ML-102 aneroid barometers
- 9 B0220 Perform operational checks of ML-658 digital altimeter-barometers
- 10 B0222 Perform turn on-off procedures for ML-658 digital altimeter-barometers and check for normal indications
- 11 B0223 Remove or replace components in ML-658 digital altimeter-barometer systems
- 12 C0227 Adjust GMQ-32 projector lamp current
- 13 C0230 Align FMQ-8 dewpoint and ambient air temperature mechanisms
- 14 C0231 Align GMQ-32 receivers or projectors
- 15 C0235 Calibrate GMQ-32 systems
- 16 C0236 Complete CT-12K alignment routines
- 17 C0237 Complete FMQ-8 performance tests
- 18 C0238 Complete FMQ-13 performance tests
- 19 C0239 Complete GMQ-34 performance tests
- 20 C0240 Configure IP-1456 indicators
- 21 C0243 Isolate malfunctions in CT-12K systems
- 22 C0245 Isolate malfunctions in FMQ-8 systems
- 23 C0247 Isolate malfunctions in FMQ-13 systems
- 24 C0248 Isolate malfunctions in GMQ-32 projectors, receivers, or recorders
- 25 C0249 Isolate malfunctions in IP-1456 indicators
- 26 C0254 Perform operational checks of FMQ-8 temperature-dew point measuring sets
- 27 C0256 Perform operational checks of FMQ-13 wind measuring set sounding systems
- 28 C0257 Perform operational checks of GMQ-32 transmissometer sets
- 29 C0259 Perform operational tests of CT-12K with maintenance terminal
- 30 C0260 Perform turn on-off procedures for CT-12K and check for normal indications

- 31 C0262 Perform turn on-off procedures for FMQ-8 and check for normal indications
 - 32 C0264 Perform turn on-off procedures for FMQ-13 and check for normal indications
 - 33 C0265 Perform turn on-off procedures for GMQ-32 and check for normal indications
 - 34 C0266 Perform turn on-off procedures for IP-1456 and check for normal indications
 - 35 C0269 Remove or replace components in CT-12K systems
 - 36 C0271 Remove or replace components in FMQ-8 systems
 - 37 C0273 Remove or replace components in FMQ-13 systems
 - 38 C0274 Remove or replace components in GMQ-32 projectors, receivers, or recorders
 - 39 C0275 Remove or replace components in IP-1456 indicators
 - 40 C0279 Repair signal error detection (SED) cards
-

0006 COMPONENT MAINTENANCE

- 1 A0089 Isolate malfunctions in oscillators, such as tuned cavity, tuning fork, or crystal
- 2 A0090 Isolate malfunctions in over/under current or voltage protection circuitry
- 3 A0092 Isolate malfunctions in preamplifiers
- 4 A0093 Isolate malfunctions in receivers, other than GMQ-32 receivers
- 5 A0122 Perform operational checks of oscillators, such as tuned cavity, tuning fork, or crystal
- 6 A0123 Perform operational checks of over/under current protection circuitry
- 7 A0124 Perform operational checks of over/under voltage protection circuitry
- 8 A0141 Remove or replace air filters
- 9 A0143 Remove or replace bulb holders
- 10 A0145 Remove or replace cable harnesses
- 11 A0146 Remove or replace circuit breakers
- 12 A0151 Remove or replace directional couplers
- 13 A0153 Remove or replace electrical grounding systems
- 14 A0155 Remove or replace electrical wires, other than internal chassis wires
- 15 A0157 Remove or replace fuse holders
- 16 A0165 Remove or replace oscillators, such as tuned cavity, tuning fork, or crystal
- 17 A0167 Remove or replace plug-in components, such as integrated circuits or fuses
- 18 A0168 Remove or replace potentiometers
- 19 A0170 Remove or replace power supplies
- 20 A0171 Remove or replace preamplifiers
- 21 A0172 Remove or replace printed circuit card components
- 22 A0174 Remove or replace receivers
- 23 A0175 Remove or replace relays
- 24 A0176 Remove or replace RF attenuators
- 25 A0177 Remove or replace RF connectors
- 26 A0178 Remove or replace RF filters
- 27 A0179 Remove or replace semiconductor devices
- 28 A0180 Remove or replace solderless connectors
- 29 A0184 Remove or replace transformers
- 30 A0185 Remove or replace transmitters
- 31 A0186 Remove or replace variable attenuators
- 32 A0188 Repair cable harnesses
- 33 A0191 Repair electrical circuits
- 34 A0192 Repair electrical wires
- 35 A0193 Repair equipment racks or shelters
- 36 A0195 Repair printed circuit cards
- 37 A0199 Service air filters
- 38 A0200 Service batteries
- 39 A0203 Shut down equipment in emergency situations

0007 TEST EQUIPMENT MAINTENANCE

- 1 A0017 Adjust mechanical zero of meters
 - 2 A0018 Adjust oscillators, such as tuned cavity, tuning fork, or crystal
 - 3 A0019 Adjust over/under current or voltage protection circuitry
 - 4 A0020 Adjust preamplifier gain
 - 5 A0024 Adjust voltage standing wave ratios (VSWRs)
 - 6 A0060 Inspect operational amplifiers
 - 7 A0061 Inspect oscillators, such as tuned cavity, tuning fork, or crystal
 - 8 A0062 Inspect over/under current protection circuitry
 - 9 A0063 Inspect over/under voltage protection circuitry
-

0008 TRANSPORTABLE EQUIPMENT MAINTENANCE

- 1 B0207 Adjust or align ML-24 sling psychrometers
 - 2 B0208 Adjust or align ML-102 aneroid barometers
 - 3 C0241 Determine dewpoints using ML-429 psychrometric calculators
 - 4 C0268 Recharge FMQ-8 dewpoint elements
 - 5 E0294 Level GMQ-33 units
 - 6 E0295 Measure TMQ-36 battery voltages
 - 7 E0296 Operate TMQ-36 recorders
 - 8 E0297 Operate TMQ-36 remote display units
 - 9 E0298 Perform equipment checks of TMQ-34 transportable meteorological observing sets
 - 10 E0299 Perform operational checks of GMQ-33 transportable cloud height measuring sets
 - 11 E0300 Perform operational checks of TMQ-34 systems
 - 12 E0301 Perform TMQ-36 self-test procedures
 - 13 E0302 Perform TMQ-36 sensor deicing procedures
 - 14 E0303 Set up TMQ-36 antenna masts
-

0009 SUPPLY

- 1 S0859 Review due-in-from maintenance (DIFM) document listings
 - 2 S0860 Review supply transaction listings or rosters
 - 3 T0873 Maintain property custodian authorization/custody receipt listings (CA/CRLs)
 - 4 T0877 Prepare equipment shipping documents
 - 5 T0880 Prepare requisitions for equipment or supplies
-

0010 DIGITAL COMPONENT TROUBLESHOOTING

- 1 A0022 Adjust time delay circuits
- 2 A0076 Isolate malfunctions in analog-to-digital or digital-to-analog converters
- 3 A0079 Isolate malfunctions in audio amplifiers
- 4 A0080 Isolate malfunctions in backup power equipment
- 5 A0081 Isolate malfunctions in buffers or registers
- 6 A0083 Isolate malfunctions in digital counters

- 7 A0084 Isolate malfunctions in digital decoders or encoders
 - 8 A0085 Isolate malfunctions in display control panels
 - 9 A0087 Isolate malfunctions in intensity control circuits
 - 10 A0088 Isolate malfunctions in operational amplifiers
 - 11 A0094 Isolate malfunctions in time delay circuits
 - 12 A0096 Isolate malfunctions in video amplifiers
 - 13 A0114 Perform operational checks of analog-to-digital or digital-to-analog converters
 - 14 A0116 Perform operational checks of digital counters
 - 15 A0117 Perform operational checks of digital decoders or encoders
 - 16 A0142 Remove or replace analog-to-digital or digital-to-analog converters
 - 17 A0147 Remove or replace coaxial switches
 - 18 A0149 Remove or replace digital counters
 - 19 A0150 Remove or replace digital decoders or encoders
 - 20 A0154 Remove or replace electrical junction boxes
 - 21 A0160 Remove or replace intensity control circuits
 - 22 A0161 Remove or replace internal chassis wiring
 - 23 A0162 Remove or replace moisture filters
 - 24 A0164 Remove or replace operational amplifiers
 - 25 A0166 Remove or replace phase shifters
 - 26 A0169 Remove or replace power boxes
 - 27 A0181 Remove or replace solid-state buffers or registers
 - 28 A0190 Repair coaxial switches
-

0011 INTERMEDIATE FREQUENCY (IF) AMPLIFIER MAINTENANCE

- 1 A0015 Adjust intermediate frequency (IF) amplifiers
 - 2 A0086 Isolate malfunctions in IF amplifiers
 - 3 A0119 Perform operational checks of IF amplifiers
 - 4 A0159 Remove or replace IF amplifiers
-

0012 AUTOMATIC FREQUENCY CONTROL (AFC) UNIT MAINTENANCE

- 1 A0025 Align automatic frequency control (AFC) circuits
 - 2 A0075 Isolate malfunctions in AFC unit circuitry
 - 3 A0113 Perform operational checks of AFC units
 - 4 A0140 Remove or replace AFC units
-

0013 CABLE INSTALLATION

- 1 A0033 Assemble cable routing devices
- 2 A0034 Assemble cable termination loads
- 3 A0035 Assemble conduits
- 4 A0037 Assemble electrical junction boxes
- 5 A0041 Assemble support cables

0014 WEATHER MEASUREMENT EQUIPMENT INSTALLATION

- 1 G0399 Install or remove FMQ-8 temperature-dew point measuring sets
 - 2 G0401 Install or remove FMQ-13 wind measuring sets
 - 3 G0403 Install or remove GMQ-32 transmissometer sets
 - 4 G0404 Install or remove GMQ-33 transportable cloud height measuring sets
 - 5 G0405 Install or remove GMQ-34 cloud height measuring sets
 - 6 G0410 Install or remove ML-17 rain gauges
 - 7 G0412 Install or remove ML-658 digital altimeter-barometers
 - 8 G0419 Install or remove TMQ-34 transportable meteorological observing sets
 - 9 G0420 Install or remove TMQ-36 transportable wind measuring sets
-

0015 TRANSMITTER MAINTENANCE

- 1 K0556 Adjust antenna RF phasing
 - 2 K0557 Adjust antenna VSWRs
 - 3 K0558 Adjust course alignments
 - 4 K0561 Adjust transmitter ID modulation
 - 5 K0562 Adjust transmitter power outputs
 - 6 K0563 Adjust transmitter RF units
-

0016 VOR INSPECTIONS

- 1 K0587 Inspect field detectors
 - 2 K0588 Inspect local monitors
 - 3 K0589 Inspect remote monitors
 - 4 K0590 Inspect VOR antennas
 - 5 K0591 Inspect VOR modulators
 - 6 K0592 Inspect VOR solid-state keyers
-

0017 VOR MAINTENANCE

- 1 K0565 Align AN/FRN-44 control-indicator interface codec cards
- 2 K0566 Align AN/FRN-44 digital computer test generators
- 3 K0567 Align AN/FRN-44 monitor signal processor cards
- 4 K0568 Align AN/FRN-44 monitor time interval counter cards
- 5 K0569 Align AN/FRN-44 RF switch drive assemblies
- 6 K0570 Align AN/FRN-44 RF tuner assemblies
- 7 K0571 Align AN/FRN-44 system carrier-to-sideband phasing
- 8 K0572 Align AN/FRN-44 system power supply control cards
- 9 K0573 Align AN/FRN-44 transmitter audio processor cards
- 10 K0574 Align AN/FRN-44 transmitter ID generator cards
- 11 K0575 Align AN/FRN-44 transmitter master oscillator cards
- 12 K0576 Align AN/FRN-44 transmitter oscillator multiplier assemblies
- 13 K0577 Align AN/FRN-44 transmitter phase compensator assemblies
- 14 K0578 Align AN/FRN-44 transmitter sideband generator assemblies

- 15 K0579 Align ID keyer circuits
 - 16 K0580 Align local monitors
 - 17 K0581 Align remote monitors
 - 18 K0583 Align VOR modulation
 - 19 K0584 Align VOR power supplies
 - 20 K0585 Align VOR solid-state keyers
 - 21 K0586 Analyze VOR system ground checks
 - 22 K0593 Isolate malfunctions in AN/FRN-44 antenna systems
 - 23 K0594 Isolate malfunctions in AN/FRN-44 system units or major subassemblies
 - 24 K0595 Isolate malfunctions in VOR system units or major subassemblies
 - 25 K0597 Measure ID modulation
 - 26 K0598 Measure ID tone oscillator frequencies
 - 27 K0599 Measure subcarrier modulation
 - 28 K0600 Measure variable phase modulation
 - 29 K0601 Measure voice modulation
 - 30 K0602 Measure VOR power supply output voltages
 - 31 K0603 Measure VOR transmitter frequencies
 - 32 K0604 Measure VOR transmitter power outputs
 - 33 K0605 Operate AN/FRN-44 input/output terminals
 - 34 K0606 Perform antenna quadrature phasing checks
 - 35 K0607 Perform PMIs on AN/FRN-44 VOR systems
 - 36 K0608 Perform VOR system flight-check ground procedures
 - 37 K0609 Perform VOR system ground checks
 - 38 K0610 Perform VOR system monitor integrity checks
 - 39 K0611 Perform VOR turn on-off procedures and check for normal indications
 - 40 K0613 Remove or replace components in AN/FRN-44 system units
 - 41 K0614 Remove or replace VOR system units or major subassemblies
-

0018 FLIGHT INSPECTION

- 1 O0735 Complete flight inspection forms
 - 2 O0736 Conduct flight inspection postflight debriefings
 - 3 O0737 Determine flight inspection requirements
 - 4 O0739 Evaluate flight inspection recordings
-

0019 NEXRAD PUP MAINTENANCE

- 1 D0281 Align color monitors on next generation radar (NEXRAD) principle user processors (PUPs)
- 2 D0282 Install software upgrades on NEXRAD PUPs
- 3 D0283 Install or remove circuit cards on NEXRAD PUPs
- 4 D0284 Install or remove cooling fans on NEXRAD PUPs
- 5 D0285 Load software into NEXRAD PUPs
- 6 D0286 Perform backups on NEXRAD PUPs
- 7 D0287 Perform display names procedures on NEXRAD PUPs
- 8 D0288 Perform PMIs on NEXRAD PUPs
- 9 D0289 Perform terminal recovery procedures on NEXRAD PUPs
- 10 D0290 Perform turn on-off procedures for NEXRAD PUPs
- 11 D0291 Reboot software on NEXRAD PUPs
- 12 D0292 Run computer diagnostics on NEXRAD PUPs
- 13 D0293 Troubleshoot hard disks on NEXRAD PUPs

0020 CHART RECORDER MAINTENANCE

- 1 A0082 Isolate malfunctions in chart recorders
 - 2 A0115 Perform operational checks of chart recorders
 - 3 A0189 Repair chart recorders
 - 4 A0201 Service chart recorders
-

0021 TECHNICAL ORDERS (TOs)

- 1 S0843 Establish or maintain automated technical order management system (ATOMS) accounts
 - 2 S0849 Maintain time compliance technical orders (TCTOs)
 - 3 S0850 Maintain TO libraries
 - 4 S0861 Review TO changes
-

0022 MAINTENANCE RECORDS

- 1 T0868 Maintain core automated maintenance system (CAMS) workcenter listings
 - 2 T0869 Maintain equipment status reports
 - 3 T0872 Maintain PMI listings
 - 4 T0879 Prepare maintenance data collection reports
-

0023 ADMINISTRATION

- 1 S0844 Initiate or maintain standby rosters or workcenter pyramid recall rosters
 - 2 S0847 Maintain administrative files
 - 3 S0848 Maintain publications libraries or files, other than TO libraries or files
 - 4 S0851 Maintain or update status indicators, such as boards, graphs, or charts
-

0024 QUALITY ASSURANCE

- 1 Q0765 Conduct safety inspections of equipment or facilities, other than protective or safety equipment
- 2 Q0766 Conduct self-inspections or self-assessments
- 3 Q0767 Conduct staff assistance visits, inspections, or audits
- 4 Q0773 Develop inspection schedules
- 5 Q0776 Develop self-inspection or self-assessment program checklists
- 6 Q0790 Evaluate changes to meteorological and navigation systems
- 7 Q0791 Evaluate inspection report findings or inspection procedures
- 8 Q0792 Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) program
- 9 Q0793 Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace
- 10 Q0794 Evaluate mission impact resulting from inoperative meteorological and navigation systems equipment
- 11 Q0795 Evaluate performance of meteorological and navigation systems

- 12 Q0796 Evaluate personnel for compliance with performance standards
 - 13 Q0799 Implement safety or security programs
 - 14 Q0802 Inspect personnel for compliance with military standards
 - 15 Q0814 Write inspection reports
 - 16 Q0819 Write replies to inspection reports
-

0025 MAINTENANCE SUPERVISION

- 1 Q0764 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops
 - 2 Q0771 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace
 - 3 Q0780 Draft budget requirements
 - 4 Q0803 Interpret policies, directives, or procedures for subordinates
 - 5 Q0809 Review budget requirements
 - 6 Q0810 Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals
 - 7 Q0813 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes
 - 8 Q0820 Write staff studies, surveys, or routine reports, other than training or inspection reports
 - 9 S0845 Initiate requests for TDY orders
-

0026 UNIT TRAINING

- 1 R0822 Brief personnel concerning training programs or matters
 - 2 R0825 Conduct on-the-job training (OJT)
 - 3 R0826 Counsel trainees on training progress
 - 4 R0827 Determine training requirements
 - 5 R0829 Develop or procure training materials or aids
 - 6 R0830 Develop training programs, plans, or procedures
 - 7 R0833 Evaluate effectiveness of training programs, plans, or procedures
 - 8 R0834 Evaluate progress of trainees
 - 9 R0837 Maintain training records or files
-

0027 WORKCENTER SUPERVISION

- 1 Q0762 Assign personnel to work areas or duty positions
- 2 Q0763 Assign sponsors for newly assigned personnel
- 3 Q0768 Conduct supervisory performance feedback sessions
- 4 Q0769 Conduct supervisory orientations for newly assigned personnel
- 5 Q0770 Counsel subordinates concerning personal matters
- 6 Q0772 Determine or establish work assignments or priorities
- 7 Q0778 Develop or establish work methods or procedures
- 8 Q0779 Develop or establish work schedules
- 9 Q0788 Establish performance standards for subordinates
- 10 Q0789 Establish procedures for accountability of equipment, tools, parts, or supplies
- 11 Q0797 Evaluate personnel for promotion, demotion, reclassification, or special awards
- 12 Q0800 Initiate actions required due to substandard performance of personnel
- 13 Q0801 Initiate personnel action requests
- 14 Q0815 Write job or position descriptions

- 15 Q0817 Write or indorse military performance reports
 - 16 Q0818 Write recommendations for awards or decorations
-

0028 MAINTENANCE SUPPORT

- 1 S0841 Compile data for records, reports, logs, or trend analyses
 - 2 S0857 Research maintenance records or reports
 - 3 S0858 Review accuracy of maintenance management documents
 - 4 S0862 Write minutes of briefings, conferences, or meetings
-

0029 TECHNICAL TRAINING

- 1 R0821 Administer or score tests
 - 2 R0823 Complete student entry or withdrawal forms
 - 3 R0824 Conduct formal course classroom training
 - 4 R0828 Develop formal course curricula, plans of instruction (POIs), or specialty training standards (STSs)
 - 5 R0832 Establish or maintain study reference files
 - 6 R0835 Evaluate training methods or techniques of instructors
 - 7 R0836 Inspect training materials or aids for operation or suitability
 - 8 R0838 Personalize lesson plans
 - 9 R0840 Write training reports
-

0030 EQUIPMENT INSTALLATION

- 1 G0424 Pack or unpack scheme materials
 - 2 G0431 Perform preinstallation surveys
 - 3 G0432 Perform preshakedown tests
 - 4 G0433 Perform shakedown tests
 - 5 G0434 Prepare installation annotated drawings
 - 6 G0435 Prepare installation supply transfer documents
 - 7 G0436 Review scheme materials
 - 8 G0437 Review scheme packages prior to installation
-

0031 PRE-/POSTCONTINGENCY ACTIVITIES

- 1 G0427 Perform postdeployment procedures
- 2 G0428 Perform postinstallation tests
- 3 G0429 Perform predeployment processing
- 4 G0430 Perform predeployment vehicle inspections
- 5 G0440 Set up or tear down mobile TACAN systems

0032 MARKER BEACON MAINTENANCE

- 1 J0542 Align marker beacons
 - 2 J0544 Inspect marker beacon antenna elements or cables
 - 3 J0545 Inspect marker beacons
 - 4 J0546 Isolate malfunctions in marker beacon systems
 - 5 J0547 Measure marker beacon battery voltages
 - 6 J0548 Measure marker beacon ID frequencies
 - 7 J0549 Measure marker beacon percent-of-modulation
 - 8 J0550 Measure marker beacon power outputs
 - 9 J0551 Measure marker beacon radio frequencies
 - 10 J0552 Perform marker beacon intercommunication tests
 - 11 J0553 Remove or replace marker beacon antennas
 - 12 J0554 Remove or replace marker beacon subassemblies
 - 13 J0555 Set up marker beacon ID codes
-

0033 RVR-400 RVR COMPUTING SET MAINTENANCE

- 1 C0228 Adjust RVR-400 remote display indicators or slave inputs
 - 2 C0232 Align RVR-400 frequency shift keys (FSKs)
 - 3 C0233 Align RVR-400 input cards
 - 4 C0242 Determine RVR-400 computer system accuracy
 - 5 C0251 Isolate malfunctions in RVR-400 remote display indicators or slave input cards
 - 6 C0258 Perform operational checks of RVR-400 runway visual range computing sets
 - 7 C0267 Perform turn on-off procedures for RVR-400 and check for normal indications
 - 8 C0278 Remove or replace RVR-400 signal data converters (SDCs)
 - 9 G0414 Install or remove RVR-400 runway visual range computing sets
-

0034 FMN-1/1A RVR COMPUTING SET MAINTENANCE

- 1 C0226 Adjust FMN-1/1A input circuit cards, such as threshold or pulse width
 - 2 C0229 Align FMN-1/1A drum assemblies
 - 3 C0244 Isolate malfunctions in FMN-1/1A displays
 - 4 C0253 Perform operational checks of FMN-1/1A runway visual range computing sets
 - 5 C0261 Perform turn on-off procedures for FMN-1/1A and check for normal indications
 - 6 C0270 Remove or replace components in FMN-1/1A displays
 - 7 G0398 Install or remove FMN-1/1A runway visual range computing sets
-

0035 FMQ-12 DIGITAL IONOSPHERIC SOUNDING SYSTEM MAINTENANCE

- 1 C0234 Calibrate FMQ-12 digitizers
 - 2 C0246 Isolate malfunctions in FMQ-12 systems
 - 3 C0255 Perform operational checks of FMQ-12 digital ionospheric components
 - 4 C0263 Perform turn on-off procedures for FMQ-12 and check for normal indications
 - 5 C0272 Remove or replace components in FMQ-12 systems
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6 C0280 Set FMQ-12 real-time clocks

0036 ML-653 BAROGRAPH MAINTENANCE

- 1 B0209 Adjust or align ML-563 barographs
 - 2 B0219 Perform operational checks of ML-563 barographs
 - 3 B0221 Perform turn on-off procedures for ML-563 barographs and check for normal indications
 - 4 G0411 Install or remove ML-563 barographs
-

0037 LOW FREQUENCY BEACON (LFB) INSPECTION

- 1 H0460 Inspect LFB antennas
 - 2 H0461 Inspect LFB dual transmitter control units
 - 3 H0462 Inspect LFB keyer assemblies
 - 4 H0463 Inspect LFB modulators
 - 5 H0464 Inspect LFB power supplies
 - 6 H0465 Inspect LFB radial ground systems
 - 7 H0466 Inspect LFB remote monitor receivers
 - 8 H0467 Inspect LFB remote transmitter control units
 - 9 H0468 Inspect LFB transmitters
-

0038 LFB MAINTENANCE

- 1 H0443 Adjust LFB antenna loading coil taps
- 2 H0444 Adjust LFB audio percent-of-modulation
- 3 H0445 Adjust LFB bias voltages
- 4 H0446 Adjust LFB identification (ID) tone frequencies
- 5 H0447 Adjust LFB ID keyer contacts
- 6 H0448 Adjust LFB power supply outputs
- 7 H0449 Adjust LFB remote monitor receivers
- 8 H0450 Adjust LFB system protective circuits
- 9 H0451 Adjust LFB transmitter frequencies
- 10 H0452 Adjust LFB transmitter power outputs
- 11 H0453 Adjust or align LFB remote transmitter control units
- 12 H0454 Align LFB keyer circuits
- 13 H0455 Align LFB modulators
- 14 H0456 Align LFB power supplies
- 15 H0457 Align LFB remote monitor receivers
- 16 H0458 Align LFB RF transmitters
- 17 H0459 Align LFB transmitter antenna circuits
- 18 H0469 Isolate malfunctions in LFB antennas
- 19 H0470 Isolate malfunctions in LFB system units or major subassemblies
- 20 H0472 Measure LFB audio percent-of-modulation
- 21 H0473 Measure LFB bias voltages
- 22 H0474 Measure LFB ID tone frequencies
- 23 H0475 Measure LFB input AC line voltages
- 24 H0476 Measure LFB power supply outputs
- 25 H0477 Measure LFB RF carrier frequencies

- 26 H0478 Measure LFB RF power outputs
 - 27 H0479 Perform LFB turn on-off procedures and check for normal indications
 - 28 H0480 Remove or replace LFB antennas
 - 29 H0481 Remove or replace LFB system units or major subassemblies
 - 30 H0482 Test LFB system protective circuits
-

0039 AN/TRN-41 TACAN MAINTENANCE

- 1 M0675 Adjust AN/TRN-41 power generator outputs
 - 2 M0676 Adjust AN/TRN-41 receiver/transmitter identification codes
 - 3 M0677 Align AN/TRN-41 antenna interior components
 - 4 M0678 Align AN/TRN-41 monitor/test sets
 - 5 M0679 Align AN/TRN-41 receiver/transmitters
 - 6 M0680 Inspect AN/TRN-41 antennas
 - 7 M0681 Inspect AN/TRN-41 batteries
 - 8 M0682 Inspect AN/TRN-41 DC power filters
 - 9 M0683 Inspect AN/TRN-41 monitor/test sets
 - 10 M0684 Inspect AN/TRN-41 power generators
 - 11 M0685 Inspect AN/TRN-41 receiver/transmitters
 - 12 M0686 Isolate malfunctions in AN/TRN-41 antennas
 - 13 M0687 Isolate malfunctions in AN/TRN-41 system units or major subassemblies
 - 14 M0688 Measure AN/TRN-41 antenna VSWRs
 - 15 M0689 Measure AN/TRN-41 DC power filter voltages
 - 16 M0690 Measure AN/TRN-41 monitor/test set outputs
 - 17 M0691 Measure AN/TRN-41 receiver/transmitter outputs
 - 18 M0692 Operate AN/TRN-41 monitor/test sets
 - 19 M0693 Package AN/TRN-41 in air-dropable configurations
 - 20 M0694 Package AN/TRN-41 in man-portable configurations
 - 21 M0695 Remove or replace AN/TRN-41 antennas
 - 22 M0696 Remove or replace components in AN/TRN-41 systems
 - 23 M0697 Service AN/TRN-41 power generators
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0040 OE-258/URN MODULATION GENERATOR MAINTENANCE

- 1 L0643 Align OE-258/URN radiated power levels
 - 2 L0655 Isolate malfunctions in OE-258/URN systems
 - 3 L0665 Perform OE-258/URN turn on-off procedures and check for normal indications
 - 4 L0666 Perform PMIs on OE-258/URN systems
 - 5 L0672 Remove or replace OE-258/URN antennas
 - 6 L0673 Remove or replace OE-258/URN modulation generator subassemblies
 - 7 L0674 Remove or replace OE-258/URN system units or major subassemblies
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0041 CONTINGENCY OPERATIONS

- 1 P0748 Install or remove camouflage netting
- 2 P0749 Load or unload equipment onto or from aircraft, mobilizers, pallets, or vehicles
- 3 P0751 Perform pallet buildups
- 4 P0754 Prepare hazardous cargo markings

- 5 P0757 Set up or tear down site lighting fixtures
 - 6 P0758 Set up or tear down tent heaters
 - 7 P0759 Set up or tear down tents
-

0042 AN/TRN-26/26B TACAN MAINTENANCE

- 1 L0615 Adjust AN/TRN-26 antenna control units
- 2 L0616 Adjust AN/TRN-26B antenna control units
- 3 L0617 Adjust AN/TRN-26 antenna positioning
- 4 L0618 Adjust AN/TRN-26 antenna reference trigger assemblies
- 5 L0619 Adjust AN/TRN-26 digital alarms
- 6 L0620 Adjust AN/TRN-26 monitor reference bursts
- 7 L0621 Adjust AN/TRN-26 monitor reply delays
- 8 L0622 Adjust AN/TRN-26 receiver-transmitter control sections
- 9 L0623 Adjust AN/TRN-26 receiver-transmitter ID logic sections
- 10 L0624 Adjust AN/TRN-26 receiver-transmitter power supply sections
- 11 L0625 Adjust AN/TRN-26 unit 4 control transfer units
- 12 L0626 Adjust AN/TRN-26 unit 11 power supplies
- 13 L0627 Align AN/TRN-26 monitor alarm-time circuits
- 14 L0628 Align AN/TRN-26 monitor chain-gated multipliers
- 15 L0629 Align AN/TRN-26 monitor interrogation circuits
- 16 L0630 Align AN/TRN-26 monitor oscillators
- 17 L0631 Align AN/TRN-26 monitor peak power
- 18 L0632 Align AN/TRN-26 monitor receiver or azimuth monitoring
- 19 L0633 Align AN/TRN-26 monitor reference burst decodings or separations
- 20 L0634 Align AN/TRN-26 monitor reply inputs
- 21 L0635 Align AN/TRN-26 monitor video pulse detectors
- 22 L0636 Align AN/TRN-26 receiver sections
- 23 L0637 Align AN/TRN-26 transmitters
- 24 L0638 Align antenna transfer units
- 25 L0639 Align continuous identity alarms
- 26 L0641 Align monitor antennas
- 27 L0644 Calculate receiver sensitivity system losses
- 28 L0645 Calculate RF system losses at antenna switching units
- 29 L0646 Change RF monitor channels in AN/TRN-26 systems
- 30 L0647 Inspect AN/TRN-26 antenna assemblies
- 31 L0648 Inspect AN/TRN-26 monitor readouts
- 32 L0649 Isolate malfunctions in antenna transfer units
- 33 L0650 Isolate malfunctions in AN/TRN-26 antennas
- 34 L0651 Isolate malfunctions in AN/TRN-26 systems
- 35 L0652 Isolate malfunctions in AN/TRN-26B antennas
- 36 L0653 Isolate malfunctions in AN/TRN-26B system units or subassemblies
- 37 L0654 Isolate malfunctions in monitor antennas
- 38 L0656 Measure AN/TRN-26 antenna VSWRs
- 39 L0657 Measure AN/TRN-26 receiver section signals
- 40 L0658 Measure AN/TRN-26 unit 4 control transfer unit alarm circuit signals
- 41 L0659 Measure AN/TRN-26 unit 5/9 monitor signals
- 42 L0660 Operate AN/TRN-26B power distribution panels
- 43 L0661 Operate AN/TRN-26 remote indicators
- 44 L0662 Perform AN/TRN-26 monitor integrity checks
- 45 L0663 Perform monitor receiver sensitivity alarm checks on AN/TRN-26 systems
- 46 L0664 Perform monitor turn on-off procedures and check for normal indications

- 47 L0667 Remove or replace AN/TRN-26 antennas
 - 48 L0668 Remove or replace AN/TRN-26 monitors
 - 49 L0669 Remove or replace AN/TRN-26 system units or subassemblies
 - 50 L0670 Remove or replace AN/TRN-26B antennas
 - 51 L0671 Remove or replace AN/TRN-26B system units or subassemblies
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0043 FRR-95 SOLAR RADIO TELESCOPE MAINTENANCE

- 1 F0314 Adjust FRR-95 thermal loads
 - 2 F0317 Adjust or align FRR-95 lock-in amplifiers
 - 3 F0336 Align FRR-95 radiometers
 - 4 F0337 Align FRR-95 solar tracking antennas equatorially
 - 5 F0338 Align FRR-95 time code generators
 - 6 F0343 Assemble or disassemble FRR-95 thermal loads
 - 7 F0344 Calibrate FRR-95 radiometers
 - 8 F0346 Isolate malfunctions in FRR-95 system units or major subassemblies
 - 9 F0352 Perform maintenance stow procedures for FRR-95 28-foot antennas
 - 10 F0360 Perform operational checks of FRR-95 radiometers
 - 11 F0365 Perform turn on-off procedures for FRR-95 and check for normal indications
 - 12 F0378 Remove or replace FRR-95 system units or major subassemblies
-

0044 GENERAL MAINTENANCE

- 1 A0026 Analyze circuit waveforms
- 2 A0027 Analyze indications of built-in tests (BITs)
- 3 A0028 Analyze radiation patterns
- 4 A0029 Analyze system block diagram functional operations
- 5 A0030 Analyze system circuit operations
- 6 A0040 Assemble radio frequency (RF) cables to electrical length
- 7 A0043 Communicate over radio during operational tests
- 8 A0044 Communicate with aircrews on flight-check observations or adjustments
- 9 A0051 Evaluate equipment parameters, such as meter readings
- 10 A0053 Initiate BITs
- 11 A0054 Inspect dessicants
- 12 A0055 Inspect electrical grounding systems
- 13 A0056 Inspect electrical wiring
- 14 A0059 Inspect lead-acid batteries or battery boxes
- 15 A0064 Inspect protective or safety equipment
- 16 A0066 Inspect solid-state digital circuitry
- 17 A0067 Inspect support cables
- 18 A0069 Inspect towers or supports for loose hardware, tension, or level
- 19 A0071 Install equipment modification kits
- 20 A0074 Interpret plans, diagrams, or schematics
- 21 A0091 Isolate malfunctions in power supplies
- 22 A0095 Isolate malfunctions in transmitters
- 23 A0097 Label equipment
- 24 A0098 Lace or tie-wrap wiring assemblies
- 25 A0099 Maintain tool kits
- 26 A0100 Measure alternating current (AC) ripple on direct current (DC) voltages
- 27 A0101 Measure AC voltages

- 28 A0102 Measure audio frequencies
- 29 A0104 Measure DC voltages
- 30 A0106 Measure radiation patterns
- 31 A0108 Measure signal loss of RF transmission lines
- 32 A0112 Perform corrosion control procedures
- 33 A0125 Perform operational checks of power supplies
- 34 A0128 Perform operational checks of receivers
- 35 A0131 Perform operational checks of transmitters
- 36 A0132 Perform operator maintenance on vehicles
- 37 A0134 Perform preventive maintenance inspections (PMIs) on bail-out systems
- 38 A0135 Perform radiation pattern ground checks
- 39 A0137 Record flight-check readings
- 40 A0138 Record radiation pattern ground check readings
- 41 A0144 Remove or replace bulbs
- 42 A0152 Remove or replace dummy loads
- 43 A0156 Remove or replace equipment batteries
- 44 A0163 Remove or replace obstruction lights
- 45 A0173 Remove or replace printed circuit cards
- 46 A0183 Remove or replace thru-line wattmeter elements
- 47 A0205 Test bail-out alarm systems
- 48 A0206 Trace circuits or signals using block or circuit diagrams
- 49 B0211 Inspect instrument cases or shelters
- 50 T0865 Identify parts using illustrated parts breakdowns (IPBs)

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